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UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

DREW SCIENTIFIC, INC.,	:	08 CV 1490 (AKH)
Plaintiff,	:	
-v-	:	**REPLY DECLARATION OF KARL GU IN FURTHER SUPPORT OF MOTION FOR A PRELIMINARY INJUNCTION**
POINTCARE TECHNOLOGIES, INC.,	:	
Defendant.	:	

KARL GU deposes and says:

1. I am employed by Drew Scientific, Inc. ("Drew") as a software engineer. Although I was not chosen by PointCare to be deposed in this lawsuit, I submit this Declaration in response to the new allegations asserted by PointCare Technologies, Inc. ("PointCare") in opposition to Drew's motion for a preliminary injunction.

2. Specifically, the purpose of this Declaration is twofold: first, to clarify the record as to PointCare's wholesale failures with respect to software for the High-Thoroughput ("HT") project, and second, to correct various misstatements asserted by PointCare employees in their affidavits that concern PointCare's responsibilities with respect to software and my involvement with the same.

HT Software – the User Interface and CD4 Algorithm

3. Beginning in June 2006, I was assigned to work with software engineers from PointCare with respect to our joint HT project with them. Specifically, I worked with Andrea Desrosiers, Jennifer Waite and Dorothy Branco on this project.

4. From the very beginning of the Drew/PointCare relationship in June 2006 until now, no one ever disputed that these PointCare software engineers were fully responsible for seeing to completion two critical aspects of the HT's software – the graphical User Interface ("UI") and the CD4 algorithm. For this reason, I was very surprised when the attorneys for Drew informed me last weekend that in opposing Drew's motion for a preliminary injunction, PointCare has for the first time apparently changed course and blamed me personally for its software deficiencies. As set forth at length below, I note at the outset that PointCare failed to complete both the UI and the CD4 algorithm, which rendered testing of the HT machine impossible.

5. On June 15, 2006, I drafted a memorandum to Donald Barry of PointCare to "outline the initial tasks for the PointCare software team to start work on the user interface part of the CD4 software." (A true and correct copy of this memorandum and the cover e-mail is annexed hereto as Exhibit 1). As I was working overtime to complete an unrelated, pre-existing Drew project and had a pre-planned family vacation, I explained that I would not be able to provide much other assistance during this "3 to 4 week" period. (Id.)

6. On July 13 and 14, 2006, I met with Mr. Barry and the three PointCare software engineers at PointCare's Marlborough, Massachusetts headquarters. During that meeting we discussed the fact that PointCare was responsible for completing the UI and the CD4 algorithm. As a token of good faith, I expressed that I would be more than happy to provide PointCare with

help in working on these issues if the need ever arose. At no time did I ever state that I would be "responsible" for them, however. Nor do I know of any instance in which anyone ever made such a representation.

7. Over a month later, I received an e-mail from Jennifer Waite dated August 16, 2006, in which she stated "I'm really only just starting to get my feet wet this week because I've been busy finishing up some other projects." (A true and correct copy of this e-mail is annexed hereto as Exhibit 2). Her e-mail included a "tentative schedule" for software work, with deadlines extending to September 30, 2006. (Id.)

8. On September 7, 2006, Andrea Desrosiers sent me an e-mail reaffirming that PointCare was responsible for the CD4 algorithm. (A true and correct copy of this e-mail is annexed hereto as Exhibit 3). She stated: "My computational scientist, Dorothy [Branco], has begun to look at the FCS data we are currently acquiring from the Excell we have here. She will modify the current algorithm for analyzing the Excell data." (emphasis added).

9. From the outset, PointCare's progress with respect to both the UI and the CD4 algorithm was very slow. However, I frequently spoke with PointCare's software engineers by telephone and tried to offer my support by answering any questions they may have had. On December 13, 2006, Andrea Desrosiers and Jennifer Waite traveled to Drew's Dallas headquarters and met with me, my colleague William Ross, and Jason Werner, who is a software developer and consultant for Capsher Technology ("Capsher"). Capsher was hired by Drew in late 2006 to help Drew with the service software. Critically, PointCare (not Drew) then hired Capsher in early 2007 to assist them with the development of the CD4 algorithm.

10. At this December 13 meeting, Ms. Desrosiers reported to me that the UI software was "close to 50% done" and that PointCare estimated that they would finish the UI by the "end

of January 2007." I was concerned about PointCare's delays, and suggested that they bring in additional resources to ensure that the UI was completed. I included Ms. Desrosiers' "estimate" and my recommendation in the December 13, 2006 meeting minutes that I circulated to, among others, Ms. Desrosiers, Ms. Waite, and Mr. Barry. (A true and correct copy of these minutes with a cover e-mail are annexed hereto as Exhibit 4). At no time did anyone ever state that my meeting minutes were inaccurate.

11. The CD4 algorithm and the UI were the focus of discussion at the December 13 meeting. Specifically, Ms. Desrosiers stated that she "will be working with another person from PointCare on implementing the discussed interface for the CD4 algorithm dll." (See id.). She assured me that she "will make the CD4 dll run faster and not freeze the user interface." (Id.) Again because I was concerned about PointCare's lack of progress and wanted to move this joint venture forward, I offered to assist PointCare by answering any questions with respect to the same. PointCare's responsibility for the CD4 algorithm, along with my offer to help answer any questions, were explicitly incorporated into the meeting minutes that I circulated to PointCare. (Id.). As noted above, at no time did anyone ever state that my meeting minutes were inaccurate.

12. I immediately shared my growing concerns with my supervisor at Drew, Andrew Kenney. On December 13, 2006, Mr. Kenney emailed Doug Nickols and Frank Matuszak, both of Drew, and put my frustrations into writing. He wrote:

> We are running into a problem with the work PC is doing on the software. It was due in September, then Thanksgiving, now January. This is looking like the critical path right now. Karl thinks they are spending more time in France than on our work and that they have been told to give C2 priority. They are expecting a June launch apparently! I have asked Gary [Young] to complain to Don [Barry] that this work is slipping badly.

(A true and correct copy of this e-mail is annexed hereto as Exhibit 5). The reference to "C2" in Mr. Kenney's email concerns C2 Diagnostics, a French company that was primarily responsible for manufacturing the Near Patient ("NP") device.

13. Nearly a month later, PointCare still had done nothing to allay my fears. On January 9, 2007, Jennifer Waite e-mailed me and stated: "I know it looks like there's a lot left to do...but I'm pretty confident I'll have all of the coding done by the end of the month. It might not necessarily work perfectly on the instrument right away." (A true and correct copy of this e-mail is annexed hereto as Exhibit 6).

14. Yet another month later, Ms. Waite emailed me on February 6, 2007 and said: "I'm planning on having all high priority tasks completed by Friday. Our CD4.dll might not be quite ready for action by then." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 7). ("CD4.dll" is a shorthand reference to the CD4 algorithm). That same night, Mr. Barry acknowledged that "the delivery of the software is already a week late from the scheduled date" and inquired as to whether I anticipated any possible delays by Drew with respect to software integration "assuming that the software will be finished [by PointCare] by Friday." (See id.).

15. Somewhat irked by Mr. Barry's inquiry, I responded in no uncertain terms: "If I cannot get the UI and the CD4 dll, it is impossible to do any further integration." (See id.). (Emphasis added).

16. Nonetheless, the UI and the CD4 algorithm were still not completed by PointCare. On February 20, 2007, I sent an e-mail to Mr. Barry and the three PointCare software engineers, and stated: "In summary, if PCT team believes that Jason [Werner] or me will be responsible for fixing all problems related with code produced by PCT team, this is really an unfortunate

confusion. I will offer some help if available." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 8).

17. On March 2, 2007, Ms. Waite informed me by e-mail that Capsher was going to "help [them] with the CD4." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 9). Again emphasizing that the CD4 algorithm was PointCare's responsibility, I replied on March 5, 2007 and said that "once Capsher sort[s] out the problem, you may need to come to Dallas to work a few days to finish the integration." (See id.).

18. On March 26, 2007, I was copied on an e-mail in which Ms. Waite admitted that "we have more work to do to fix the meat of the DLL functions...but we now [are] on our way!" (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 10). In order to keep my Drew colleagues updated, I forwarded her email to Mr. Kenney, Mr. Nickols and Mr. Young, and again noted that "it is down to PointCare to supply a version of the CD4 dll to go with the unit." (Id.)

19. After many requests from me, Ms. Waite visited Drew's Dallas facilities on April 22, 2007 to work on HT software. Critically, the UI and the CD4 algorithm both continued to have many software "bugs" during her visit to Dallas. She originally planned to stay in Dallas for four to five days, but her trip was extended due to the numerous software bugs. Indeed, when she left for Massachusetts on May 3, 2007, citing personal reasons for her (perhaps early) departure, the UI and the CD4 algorithm were both extremely unstable, and the glaring problems remained.

20. Incredibly, both the UI and the CD4 algorithm were still not completed on May 8, 2007, when Ms. Waite informed me that "Dorothy [Branco] won't be available to work on the

DLL until a bit later this week . . . We should have it ready for you by early next week." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 11).

21. Three days later, I was disappointed and somewhat angered when Ms. Waite e-mailed me on May 11, 2007 that "Dorothy is working on the implementation concurrently with a higher priority project." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 12) (emphasis added). I forwarded Ms. Waite's email to Mr. Kenney, Mr. Nickols and Mr. Young and expressed my profound frustration:

> After all the help I gave to PointCare, I was expecting in a couple of weeks to have a CD4 software ready for validation. Originally I thought PointCare is late for another one week for the part I am requesting. It seems to me that I did not really understand what's going on in their side. They are working on a higher priority project as they said in the mail.

(A true and correct copy of this e-mail chain is annexed hereto as Exhibit 13).

22. This "higher priority project" was revealed to me in an e-mail from Peter Hansen dated May 29, 2007, in which he announced: "I will have to stop HT software work at PCT for approximately 2 ½ weeks from today in order to meet long standing, scheduled obligations for our software group on the NOW." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 14). (The "NOW" refers to the NP device.)

23. In response, Mr. Nickols copied me on an e-mail dated May 30, 2007. He stated:

> PointCare continues to fail to meet deadlines, falling short of our expectations. Dll software completion has slipped 6 months and counting. Hopefully, their cobbled together UI will be sufficient to move along. If it's not, please let me know immediately.

(See id.).

24. On June 1, 2007, Ms. Waite e-mailed me "a list of UI tasks that still need to be completed," which list included no less than ten items. (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 15). To my disbelief, she further stated: "I do not know at this

time when these tasks will be complete because for the next 2 weeks I will be working on our AuRICA NOW software validation which includes me going to France for a week." (Id.)

25. In light of this e-mail and Dr. Hansen's May 29, 2007 e-mail, it was abundantly clear to me that PointCare's entire software team had been reassigned to work on the "higher priority project" – which was PointCare's NP device. Although PointCare's software team was supposed to return to work on the HT project, they never did.

26. On June 8, 2007, Ms. Waite emailed me what she described as "a new CD4 DLL file, a new UI executable file, and the CD4 DLL integration document." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 16). Although I was not optimistic, I told Mr. Young and Mr. Nickols about this development and stated that "we will start testing ASAP." (Id.) As a courtesy to Ms. Waite, I responded to her e-mail shortly after it was sent and, without reviewing the substance thereof, said that "William [Ross] will try the new software soon." (See Exhibit 10 to Waite Aff.).

27. That same day, I responded again to Ms. Waite in writing and told her that after an initial review, I had noticed that the "classification for CD4 is set as 0 all the time when store[d] to disk," and noted that "I am not sure why you have any junk data." (A true and correct copy of this e-mail chain is annexed hereto as Exhibit 17). This was in response to Ms. Waite's question in her June 8 e-mail about a possible problem with Drew's software, which problem did not exist. When I explained the same, she acknowledged by e-mail that she had made a mistake. (See id.)

28. As promised, in short order, my colleague William Ross and I reviewed the CD4 algorithm and UI that PointCare provided to me on June 8, 2007, and determined that they were incomplete and wholly non-functional – they were repeatedly crashing and were extremely

unstable. I believe that this crashing was due to a critical problem with the CD4 algorithm that PointCare could never solve – it was unable to calculate CD4 positive white cell lymphocytes as a percentage of the total lymphocyte population being tested, and divisions of zero were rendering the data entirely useless. (A number divided by zero is indeterminable). Indeed, PointCare's failure to finish the software work that was its sole responsibility has rendered it impossible to test the HT machine to the extent that might otherwise be desirable.

29. I communicated my findings to Ms. Waite by telephone sometime in early June, 2007. In light of the fatal deficiencies with respect to the CD4 algorithm and the UI, which had persisted for close to one year, I saw no reason to prepare a written report as to the same.

30. Subsequently, in November 2007 I reviewed all the software sources from the PointCare FTP site that Ms. Waite had provided to me. It appears to me that the critical CD4 algorithm work was stopped in early June of 2007 and that no work has been done on the important UI since August 2007.

31. As noted above, PointCare's failure to finish the software work that was its responsibility has rendered it entirely impossible to test the HT machine to the extent that might otherwise be desirable. I related this fact to Dr. Herbert Chow when he came to Drew's facilities in Dallas to test the HT in November 2007. Dr. Chow's test results confirmed these critical software shortcomings.

Misstatements in PointCare Affidavits

32. For the sake of brevity, I would like to incorporate my sworn statements above in response to all assertions made by PointCare in its April 27, 2008 Opposition to Drew's motion for a preliminary injunction that concern HT software and/or my involvement with the same, including the five Affidavits and the Memorandum of Law therewith. However, to further

clarify the record, I address below relevant paragraphs from the Affidavits of Jennifer Waite, Andrea Desrosiers, and Peter Hansen that I found to be particularly troubling. To the extent that such allegations are repeated by or among PointCare's affiants, I have addressed them directly only once in this Declaration.

Desrosiers Affidavit

33. In Andrea Desrosiers' Affidavit dated April 25, 2008 (the "Desrosiers Aff."), Ms. Desrosiers claims in relevant part that "Drew first needed to complete the instrument control and service software to develop the HT engineering prototype." (See Desrosiers Aff. ¶¶ 3-4). I believe this to be a very misleading sentence. First, the instrument control is fully functional and has been since late 2006. Second, and more importantly, the "service software" depends on the CD4 algorithm that PointCare was responsible for completing, and the testing of the machine depends on the functionality of the UI, neither of which PointCare ever completed. PointCare's failure to finish the CD4 algorithm and UI has rendered it impossible to test the HT machine. Any statement to the contrary is patently untrue.

34. Ms. Desrosiers further states that "[w]ith respect to PointCare's obligations to develop the user interface software and the CD4 algorithm, PointCare effectively completed these in a timely manner." (Id. at ¶ 5). (emphasis added). This is absolutely not true. I do not know what Ms. Desrosiers means in using the qualifier "effectively," but I am certain that the CD4 algorithm and UI were never completed.

35. Additionally, she represents that she is "not aware of any failure by PointCare's HT software team that would have hindered Drew's HT prototype development." (Id. at ¶ 5). With all due respect to Ms. Desrosiers, I believe that if she is not aware of any such failure, it is because she was entirely focused on developing the NP device to the detriment of the HT.

Indeed, dating back to June 2006 I am aware of no instance in which Ms. Desrosiers contributed to solving a single problem with respect to the HT software. In fact, her subordinate, Ms. Waite, frequently telephoned me for help in resolving HT software issues instead of asking her boss for assistance. To the extent I could help Ms. Waite, I was more than happy to do the same, even though it was never my responsibility.

36. Ms. Desrosiers then states that she "learned from [me] that [I] wanted to create a 'dll' (dynamic link library) wrapper for PointCare's CD4 algorithm," that I "emailed [her] a preliminary dll several months later which did not even contain PointCare's algorithm," and that I "later refused to finish the dll or even help PointCare finish it (despite previously committing to lead the effort)." (Id. at ¶ 6). These statements are entirely without basis in fact. In the spirit of cooperation in furtherance of our joint venture, I did offer to provide a dll skeleton for PointCare to incorporate their CD4 algorithm, but this dll skeleton was meant to be used by PointCare as a reference. I never in any way expressed that this reference would contain PointCare's algorithm (which was never completed), and similarly I never "committ[ed] to lead the effort" for the CD4 algorithm. At all times the CD4 algorithm was PointCare's responsibility. Any guidance that I provided them was done in good faith, and could not possibly have been interpreted to signal that Drew was somehow responsible for the completion of the CD4 algorithm.

37. Finally, Ms. Desrosiers' statement that I "refused to provide PointCare with the Drew source code for the instrument control and service software" has no bearing whatsoever on PointCare's failure to develop the CD4 algorithm. (Id. at ¶ 6). Simply put, my understanding was that Drew's source code was highly confidential, and sharing it with PointCare would in no way advance their efforts to complete the CD4 algorithm. This source code serves an entirely different, unrelated purpose, and has nothing to do with the CD4 algorithm. Moreover, I never

asked Ms. Desrosiers for PointCare's source code, and despite her "good faith" decision to give it to me in July 2006, I did not feel that it was appropriate for me to review the same at that time. I further note that Ms. Desrosiers gave me PointCare's old AURICA source code because she wanted me to help resolve a critical deficiency with its algorithm. Specifically, its data computation was very inefficient and she was looking for my help to suggest ways to speed it up. I provided help to the best of my knowledge and ability.

Waite Affidavit

38. I specifically incorporate by reference herein my sworn statements above to the extent that they address any and all statements in Jennifer M. Waite's Affidavit dated April 25, 2008. (the "Waite Aff."), and I specifically refer to my earlier statement in paragraph 33 hereof about the "service software."

39. Ms. Waite states that "[d]uring August and September 2006, Mr. Gu and I were in frequent contact about many aspects of the user interface software and corresponding database development and he seemed content with my progress on my assigned tasks." (See Waite Aff. at ¶ 6). Although I was content with Ms. Waite's progress in those very first months of work on the UI, I later became very frustrated by PointCare's wholesale failure to complete the same. As noted above, nine months later, on June 1, 2007, Ms. Waite e-mailed me "a list of UI tasks that still need to be completed," which list included no less than ten items. (See Exhibit 15 hereto). Moreover, any contentment that I expressed with respect to initial UI progress did not reflect any satisfaction on my part with PointCare's work on the more important CD4 algorithm, even in the summer of 2006.

40. Ms. Waite further states that in the end of January, 2007, "the task of integrating (i.e., creating the links between) [her] user interface software and the CD4 algorithm developed

by fellow PointCare colleague Dorothy Branco, was yet to be completed." (See Waite Aff. at ¶ 11). This is undoubtedly true, because both the UI and the CD4 algorithm are not complete today, much less 15 months ago. Her suggestion that I and Mr. Werner were "supposed to be leading this integration effort" makes no sense whatsoever, since one cannot successfully integrate two wholly deficient aspects of software. (Id.) In layman's terms, this is tantamount to demanding a glass of chocolate milk but depriving your server access to both chocolate and milk.

41. Ms. Waite did put some "source code files onto PointCare's FTP server," but as noted above, I was uncomfortable reviewing PointCare's proprietary new CD4 algorithm source code, and did not download the same at the time. (Id. at ¶ 12). (When in November 2007 I reviewed the software sources from the PointCare FTP site, I learned that the critical CD4 algorithm work was stopped in early June of 2007 and that no work has been done on the important UI since August 2007.) I do not believe that sharing of unrelated source code was in any way relevant to advancing the CD4 algorithm, and I do not understand PointCare's repeated references to this issue in their Opposition.

42. Furthermore, Ms. Waite's suggestion that she was making "it easier for [me] to help [PointCare] debug the problems" is misleading. (Id. at ¶ 12). Any help that I offered to provide PointCare with respect to the CD4 algorithm was done as part of a good faith effort to advance the interests of the joint venture. It was never my responsibility – nor Drew's responsibility – to do the same, although I did what I could. I did refer them to Capsher, which was hired by PointCare to help them with the CD4 algorithm.

43. Critically, Ms. Waite's recount of her April 22 to May 3, 2007 visit to Drew's Dallas facilities is extremely misleading. (Id. at ¶¶ 14-15). She states that the "software was at a point where Drew could start its software validation testing." (Id. at ¶¶ 15-16). This could not be

further from the truth. The UI and the CD4 algorithm both continued to have many software "bugs" as of May 3, and those bugs were not even fixed in PointCare's most recent software that was sent to me on June 8, 2007. Her representations to the contrary are untrue.

44. I also note that the "STAT Sample" feature referenced by Ms. Waite is a wholly non-essential element of the UI. (Id. at ¶ 21). Her reference thereto does nothing to change the critical fact that PointCare failed in its responsibility to complete the UI.

Hansen Affidavit

45. I specifically incorporate by reference herein my sworn statements above to the extent that they address any and all statements in W. Peter Hansen's Affidavit dated April 25, 2008. (the "Hansen Aff.").

46. Dr. Hansen states that in a June 2006 meeting, I "objected to Drew sharing its secret source code with PointCare and that meant [I] would have to manage the PointCare staff for HT software." (See Hansen Aff." at ¶ 76). This statement is absurd. First of all, I believe this meeting occurred in late 2006 and was a conference call with Dr. Hansen, Ms. Desrosiers, myself and others. As noted above, my objection to the sharing of any hematology calculation source code between Drew and PointCare was because of my understanding that Drew's hematology calculation source code was highly confidential, and sharing this unrelated source code with PointCare would in no way advance their efforts to complete the CD4 algorithm. Indeed, I believed that the sharing of the hematology calculation source code would only create unnecessary confusion. Second, I note that during the same conference call with Dr. Hansen, Ms. Desrosiers unequivocally stated that she did not need Drew's hematology calculation source code in order to complete PointCare's responsibilities with respect to the CD4 algorithm and the

UI. Simply put, there is no "secret source code" that would prevent PointCare from completing the CD4 algorithm and the UI.

47. I never said that I "would have to manage the PointCare staff for HT software" to Dr. Hansen or to anyone else. As described at length above, at all times it was abundantly clear that PointCare was responsible for seeing the critical CD4 algorithm and UI to completion.

48. Dr. Hansen next states that "[i]n the discussion that followed, [he] learned that Mr. Gu worked from home a lot (two days a week)." (See Hansen Aff. at ¶ 77). Again, this makes no sense, because I did not begin working from home until late February of 2007, a full 8 months after the June 2006 meeting referenced above. Moreover, my working from home has never in any way affected my ability to further the Drew/PointCare joint venture. From the outset, I was 100 percent available to PointCare when I worked from home, just as I was during the days that I primarily worked from Drew's Dallas facilities.

49. Dr. Hansen's claim that he "agreed to having [me] manage the HT software development . . . because [I] said Drew must keep [its] Excell22 software secret" is as nonsensical as it is unsupported by reality. (See Hansen Aff at ¶ 80). The same is true of the notion that "[t]his important condition put on the project by Mr. Gu meant that only [I] would know how to make any PointCare software communicate properly with the HT" and that "only [I] would be capable of 'software integration' for the HT project." (Id.) I never said these things to anyone, let alone to Dr. Hansen, and nor would I say them because they are inaccurate. As stated above, my preference to not share Drew's hematology calculation source code with PointCare had no bearing on the development of the CD4 algorithm or the UI. I flatly reject the inexplicable notion that because I had Drew's source code, I was the only person who could "make any PointCare software communicate properly with the HT."

50. Dr. Hansen's statements about my meeting with PointCare's software team in Marlborough on July 13 to 14, 2006 are also perplexing. (See Hansen Aff. at ¶¶ 82 to 84). He states that "[d]uring the meeting, [he] emphasized to Drew's engineering team that time to product launch was of the essence and part of the contract between Drew and PointCare," and that he "made it clear to everyone that the timeline was a firm, contractual commitment." (Id. at ¶¶ 83-84). At the outset, I note that I was the only person from Drew at this meeting, so I don't understand his reference to "Drew's engineering team." Second, my recollection is that Dr. Hansen was not involved in that meeting, and thus he could not have mentioned the timeline.

51. Similarly, his representation that he has "first-hand knowledge that [I] waited a full month after the technical planning meeting to have [my] first meeting with [my] PointCare software engineers and even tell them what [I] wanted them to do" is untrue and irrelevant. (See Hansen Aff. at ¶ 85). In support of this proposition, he refers to the minutes of the July 13, 2006 meeting at PointCare, which meeting he has inexplicably deemed "belated." (See Exhibit 9 to Hansen Aff.). Nowhere in those minutes does it attribute any delay to me, so this reference must have been included in error. As explained above, I had drafted a June 15, 2006 memorandum to Mr. Barry outlining "the initial tasks for the PointCare software team to start work on the user interface part of the CD4 software." (See Exhibit 1 hereto). As I was working overtime to complete an unrelated, pre-existing Drew project and had a one week pre-planned family vacation, I explained that I would not be able to provide much assistance during this short "3 to 4 week" period. (Id.) However, this memo would serve to allow PointCare to begin to work on software tasks during my very brief unavailability.

Conclusion

For all of the reasons articulated herein, I respectfully submit this Reply Declaration in further support of Drew's motion for a preliminary injunction. I declare under penalty of perjury of the laws of the United States of America that the foregoing is true and correct to the best of my knowledge.

Dated: April 30, 2008

KARL GU

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EXHIBIT 1

From: Karl Gu
Sent: 6/15/2006 4:35:03 PM
To: 'dbarry@pointcare.net'
CC: Andrew Kenney - UK; Gary Young; 'phansen@pointcare.net'
Subject: Emailing: EXCELL 22_CD4 Software Initial task.pdf

Hi Don,

This is the task list as promised and subsequent emails will direct to you only as they contains documents that provide information to accomplish the tasks.

Regards,
Karl

Attachment: EXCELL 22_CD4 Software Initial task.pdf

Drew Scientific Inc.

Memo

To: Donald Barry

From: Karl Gu

CC: Gary Young, Andrew Kenny, Peter Hansen

Date: June 15, 2006

Re: CD4 User Interface Initial Tasks

As requested, I submit this memo to outline the initial tasks for the PointCare software team to start work on the user interface part of the CD4 software. The tasks are selected based on the following considerations:

- The time frame is 3 to 4 weeks from now.
- Initial tasks need to be simple and independent of instrument operation logic
- Not much help would be available from me for this period
- A general knowledge of existing EXCELL 22 instrument is essential
- Task priority in the scope of user interface
- All tasks are strictly limited to user interface
- Workload is about 5% or less of the total user interface work in my judgment.

The tasks are:

A. General knowledge of the EXCELL 22 analyser
Familiar with the EXCELL 22 analyser by running the analyser, reading the operator manual, then going through the menu from VB, all passwords are in the code, if blocked by a condition, just remove the condition in code

B. Development Tools
As the first step, we need to decide what development tools to use for this project. EXCELL 22 was developed back in 1999-2000 and we used Visual Studio V6.0, MS ACCESS 97, and Multilizer as the language tool.
B.1 If VB .Net or C#, how much time will be involved to convert the source?
B.2 If use a later version of ACCESS database, how much effort would be?
B.3 What language tool to use? Use .NET, no third party or in-house language tool needed

C. Tasks that independent of machine operation and can be assigned to individual developer
Tasks such as data presentation, transfer, and printing do not need an operating machine. CD 4 data can be hard coded in routine to generate display, print, transfer. Have some actual layout would help marketing people to make up their minds.
C.1 Generate results display by hard code CD 4 data
C.2 Generate results printout in similar way

C.3 Get to know data file format used in EXCELL 22, the FCS file V3.0, there might be more recent version. We need to find out if any update exist of the standard. Need to consider how we plan to add the addition CD 4 scatter data in FCS file.
C.4 Transfer protocol. EXCELL 22 use ASTM protocol and now the standards updated to CLSI standard. We need to find out what is the difference of ASTM and CLSI standards. Need to consider how to add the new CD4 test order and results to our application.
C.5 Detection of power outrage. Find out what API to access UPS power status.
C.6 Generate menu tree according to supervisor/operate mode

D. WISH LIST
How to make the OVERALL UI looks like a Touch Screen application instead of menu driven app?

EXHIBIT 2

From: Karl Gu
Sent: 8/16/2006 7:21:01 PM
To: Jennifer Waite
CC: Andrea Desrosiers; Don Barry; Andrew Kenney; Gary Young
Subject: RE: AuRICA HT UI

Hi Jen,

The dates look good.

For the UPS, we need to know what type/brand/model of UPS and when the UPS is available for us to play with. Is Don responsible for this?

We may want you and/or Andrea come to Dallas mid of September to review what we have done and discuss how to implement the remaining functionality of the UI.

Regards,
Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Wednesday, August 16, 2006 12:32 PM
To: Karl Gu
Cc: Andrea Desrosiers; Don Barry
Subject: AuRICA HT UI

Hi Karl,

I'm really only just starting to get my feet wet this week because I've been busy finishing up some other projects. I have come up with a tentative schedule. Please let me know what you think…

-jen

Task

Person Responsible

Date due

Modify Drew's DB document with new changes.

J. Waite

8/25/06

Populate DB with CD4 data.

J. Waite

8/25/06

Change Screen Menus w/o functionality.

J. Waite

9/5/2006

Generate Screen/Menu change document.

J. Waite

9/11/2006

Implement print functions.

J. Waite

9/15/2006

Build remaining functionality.

J. Waite/K. Gu

9/30/2006

Detection of power outage from within UI

J. Waite/K. Gu

TBD

Provide additional data for monitoring Mono center shift

A. Desrosiers/D. Barry

TBD

Get clarification about existence of TOF signal

D. Barry

TBD

Jennifer Waite

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-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Wednesday, August 16, 2006 1:08 PM
To: Jennifer Waite
Subject: RE: Finished Meeting Minutes Doc

Hi Jen,

How are we doing for the UI? We need to fill the TBD with some dates to track the progress.

Regards,

Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Wednesday, August 02, 2006 1:12 PM
To: Karl Gu
Subject: Finished Meeting Minutes Doc

Hi Karl,

Here is the copy of the finished meeting minutes. This version is going to be released through our QA system.

-Jen

Jennifer Waite

Software Engineer

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tel: (508) 281-6926 x15

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work: jwaite@pointcare.net

personal: jwaite@alum.wpi.edu

EXHIBIT 3

From: Andrea Desrosiers
Sent: 9/7/2006 2:14:45 PM
To: Karl Gu
CC:
Subject: RE: cd4 algorithm doc

Hello Karl,

I have attached 2 documents. SRS-006 contains a summary of how our current CD4 algorithm works. The document refers to the cluster1.ini file and the FCS file header that contains the settings we use for the algorithm. The format of the cluster1.ini file, as well as the FCS file header, are described in SRS-005, pages 39 and following.

I understand that you retrieve the event data directly from the stream for your current gating algorithm, as opposed to reading the data in from the FCS file. My computational scientist, Dorothy, has begun to look at the FCS data we are currently acquiring from the Excell we have here. She will modify the current algorithm for analyzing the Excell data. Let me know if you would like some data files.

Sincerely,
Andrea Desrosiers

From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Wednesday, September 06, 2006 6:16 PM
To: Andrea Desrosiers
Subject: cd4 algorithm doc

Hi Andrea,

During my visit to PointCare, I believe that you gave me a doc, which describes the current cd4 algorithm. However, I could not locate such a doc in my computer. Could you send the cd4 algorithm related docs to me?

Thank you,

Karl

Attachment: SRS-006 B Pointcare Algorithm Specifications.pdf
Attachment: SRS-005 F Sequence Requirements Specification.pdf

PointCare Technologies Inc.	SYSTEM REQUIREMENTS SPECIFICATION	Document Number: SRS 006	Rev.B
Effective Date: 3/3/2006	AuRICA Algorithm and Flag Requirements Specification	Page 1 of 8	

Rev	ECO	Date	Description
A	E-0064	3/14/2005	Initial Release
B	E-0226	3/3/2006	New Lyse and Control changes

Name	Signature	Date	Title	Approval Function
Andrea Desrosiers			Software Developer	Originator
Jennifer Waite			Software Developer	Technical Review
Don Barry			Scientist	Technical Review
Kassey Kalutkiewicz			Chief Operating Officer	Marketing Review
Maurice Doire			Quality Assurance Manager	QA

FLOWCARE CD4 ALGORITHM AND FLAG SOFTWARE REQUIREMENTS

1. Introduction

1.1. This document describes software requirements for the Point Care Technologies AuRICA Automated Immune Hematology Analyzer data analysis package.

2. Scope

2.1. This document shall provide software requirements in enough depth to permit the construction of test cases that address all data analysis software functions.

2.2. This document applies to revision 2.0.5.0 of the algorithm which supports changes described in the Software Status Report NL-0018.

3. Applicable Documentation

3.1. SRS-002 AuRICA Software Requirements Specification

3.2. SRS-003 AuRICA Hazard Analysis

3.3. SRS-005 AuRICA Sequence Requirements Specification

3.4. NL-0018 Software Status Report

4. Algorithm Requirements

4.1. The algorithm shall be a free standing executable program callable either from within AuRICA software or from a windows command line during regression testing.

4.1.1. The command line for the program shall be "cluster1.exe filename [M] where filename refers to an FCS input file and the optional [M] parameter enables graphic visualization of the algorithm output for use during test and evaluation.

4.2. The Algorithm shall accept as input an FCS file with Forward Scatter High Peak (FSH), Forward Scatter Low Peak (FSL), Extinction Integral (EXI), Right Angle Scatter Integral (RAI), and Time of Flight (TOF) values for each event, as well as the time intervals during which events were counted, the number of events counted during each of these time intervals, the total acquisition time, the total number of digitized events, the fluid flow rate, and the nominal dispense volumes of the lyse, sheath, and sample.

4.2.1. The FCS file shall contain settings that permit use of the algorithm with lysed whole blood or control materials.

4.2.2. A setting within the FCS file (PCTSampleType) indicating whether the sample is a whole blood or a control material will determine which of the alternative settings shall be used by the algorithm.

4.2.3. Settings can also be provided by an initialization file. When the initialization file is present, settings from this file (SampleType) will be used instead of the settings in the FCS file.

4.3. The Algorithm shall return data in a comma separated value formatted file to be used either by the AuRICA software or Excel during regression testing.

4.3.1. Data Fields shall be, in left to right order, WBC count, Lymphocyte Count, Lymphocyte Percentage of WBC, CD4 positive count, and CD4 percentage of Lymphocytes, Flag character, and filename.

4.4. The Algorithm shall run "silently" (with no visual display) during use with the AuRICA software.

4.4.1. The Algorithm can run "visually" during use with the AuRICA software if the service parameter setting in the AuRICA database is set for visual display.

4.5. The Algorithm shall run "visually" during regression testing as an aid in gauging performance.

5. Analysis procedure

5.1. The flow data extracted from the FCS file (IDXCounterXXX and IDXTimerXXX, where XXX is a sequential integer with leading zeroes as necessary) shall be used to filter out all events which occur during a time interval identified as having anomalous flow characteristics.

5.1.1. Anomalous flow characteristics include a flow rate within the time interval that is less than one half of the average flow rate of the sample, or a flow rate within the time interval that is greater than four times the average flow rate of the sample.

5.1.2. All events within the time interval immediately following an interval containing anomalous flow characteristics are also filtered out.

5.2. A plot with FSH on the Y axis and FSL on the X axis shall then be constructed from the filtered FCS event data.

5.3. All events falling inside a triangular region located in the lower left-hand corner of the plot, the dimensions of which are determined during instrument set-up, shall be marked as noise, and shall be excluded from all calculations in the subsequent analysis.

5.3.1. The points at which this triangle intersects the X and Y axes are defined by settings in the initialization file (FSL_Thresh and FSH_Thresh, respectively) or the FCS file (PCTFSLThresh and PCTFSHThresh, respectively).

5.4. A density plot with FSH on the Y axis and TOF on the X axis shall be constructed from the filtered FCS event data.

5.5. A constrained search of the expected Lymphocyte area of the FSH/TOF plot shall be conducted to establish a set of local density maxima.

5.5.1. The expected Lymphocyte area is a rectangle defined by settings in the initialization file (X_Center_Max, X_Center_Min, Y_Center_Max, Y_Center_Min) or the FCS file (PCTXCenterMax, PCTXCenterMin, PCTYCenterMax, PCTYCenterMin).

5.6. The center of density (centroid) of the maxima shall be calculated using a weighted average of all the local density maxima.

5.7. An oval shall be constructed about the centroid.

5.7.1. The width of the oval shall be set to twice the distance from the centroid to the point to the left of the centroid at which the density falls to a small fraction of the total density.

5.7.2. The top of the oval is set to the distance from the centroid to the point above the centroid at which the density falls to a small fraction of the total density.

5.7.3. The bottom of the oval is set to the distance from the centroid to the point below the centroid at which the density falls to a small fraction of the total density.

5.8. The events inside of the oval shall be counted as Lymphocytes.

5.8.1. When the total number of counts inside the oval is less than 300, the top and bottom of the oval shall be set to a default height, and the width of the oval shall be set to a default width.

5.8.1.1. The default height and default width are determined during instrument set-up and are defined in the initialization file (Default_Height and DefaultWidth, respectively) or in the FCS file (PCTDefaultHeight and PCTDefaultWidth, respectively).

5.8.2. The events inside of the default oval shall be counted as Lymphocytes.

5.9. When settings in the initialization file (Silent) indicate that data is to be displayed, density plots shall be displayed with the contents of the oval highlighted.

5.10. White Blood Cells shall be counted as the sum of the Lymphocytes plus all of the events to the right of a vertical line tangent to the right-hand side of the oval.

5.11. The EXI and RAI values for the events inside of the oval shall be plotted with EXI on the Y axis and RAI on the X axis.

5.12. A line shall be drawn from the origin of the EXI/RAI plot to a position at the top of the plot. This position is called the separation angle.

5.12.1. The separation angle is the angle at which a plot of the "slant distances rate of change" as a function of the trial separation angle reaches a minimum, within a range from the start angle to the maximum angle.

5.12.1.1. The first trial separation angle (start angle) for the angle search shall be based on the angle that passes through the origin and the centroid of the EXI/RAI plot.

5.12.1.2. A range of trial separation angles is drawn in fixed increments that are based on the square root of the start angle.

5.12.1.3. For each trial separation angle, a wedge is constructed that is bounded on the left by the trial separation angle, and on the right by the next trial separation angle.

5.12.1.4. The "slant distance" of each event within this wedge is calculated.

5.12.1.4.1. The "slant distance" is defined as the distance from an event to a horizontal line y = y0, where y0 is the y-coordinate of the centroid of the EXI/RAI plot, measured along an angle joining the event to the origin.

5.12.1.5. All the "slant distances" within a wedge are added up and divided by the accumulated sum of all the "slant distances" of all prior wedges to get the "slant distance rate of change".

5.12.2. The maximum trial angle shall be an integer multiple of the start angle that passes through the origin.

5.12.2.1. The maximum possible angle is set to 300.

5.13. Events that fall to the right of this separation angle shall be counted as positive CD4 cells.

5.13.1. When settings in the initialization file (Silent) indicate that data is to be displayed, the plot shall be displayed with the positive CD4 events highlighted.

5.13.2. When settings in the initialization file (Silent) indicate that data is to be displayed, all counts and percentages shall be displayed.

6. Results Calibration

6.1. A correction shall be applied to all count values that accounts for the sample dilution and extrapolates counts to any undigitized events.

6.1.1. The final analyzed dilution shall be calculated from the nominal sample volume divided by the nominal sample, lyse, and sheath dispense volume settings in the initialization file (Sample_Volume, Lyse_Volume, and Sheath_Volume, respectively) or in the FCS file (PCTSampleVolume, PCTLyseVolume, and PCTSheathVolume, respectively).

6.1.2. The volume of sample analyzed shall be calculated by multiplying the analyzed dilution by the fluid flow rate and the total acquisition time indicated in the initialization file (FlowRate and Duration, respectively) or in the FCS file (PCTSampleRate and PCTDuration, respectively).

6.1.3. The number of events per analyzed volume shall be calculated by dividing the total number of events counted, defined in the initialization file (EventCount) or the FCS file (IDXEventCount), by the volume of sample analyzed.

6.1.4. The total number of digitized events shall be calculated by counting all the events in the FCS file with stable flow characteristics.

6.1.5. The number of events per analyzed volume is then divided by the total number of digitized events to get the count correction factor.

6.1.6. The percentage of digitized events is calculated by dividing the total number of digitized events by the total number of events defined in the initialization file (EventCount) or the FCS file (IDXEventCount).

6.2. Individual calibration slope and offset corrections that can be applied to WBC, Lymphocyte, and CD4 count values for whole blood or control materials shall be set in the initialization file (Wbc_Coeff ,

Wbc_Offset, Lym_Coeff, Lym_Offset, Cd4_Coeff, Cd4_Offset, respectively) or FCS file (PCTWBCCoeff, PCTWBCOffset, PCTLYMCoeff, PCTLYMOffset, PCTCD4Coeff, PCTCD4Offset, respectively).

6.2.1. When called by the AuRICA application WBC and Lymphocyte values shall be rounded to the nearest 100.

6.2.2. A setting in the initialization file (ReportMode) or FCS file (PCTReportMode) shall permit reporting of the uncalibrated result.

6.2.3. A setting in the initialization file (Silent) shall permit reporting of the unrounded WBC and Lymphocyte values in off-line analysis mode.

7. Flag Generation

7.1. The following error conditions shall be detected and reported in the results file via a single ASCII character.

7.2. Flags shall be checked and reported in the following order where the most serious condition is listed first and only the most serious flag is reported.

7.2.1. An "X" shall indicate that the FCS data file supplied could not be read or properly parsed and that no data values are trustworthy.

7.2.2. A "T" shall indicate that the machine event count limit as defined in the initialization file (Max_Events) or FCS file (PCTMaxEvents) was exceeded and that one of the following is also true: a) the percentage of these events that were digitized fell below 10%, or b) less than 500 of these digitized events were identified as CD4-positive.

7.2.3. A "W" shall indicate that less than 1000 WBC counts were identified and that no data values are trustworthy.

7.2.4. A "U" shall indicate that the lymphocyte cluster centroid could not be reliably located and that no data values are trustworthy.

7.2.4.1. A center stability setting in the initialization file (Center_Stability) or in the FCS file (PCTCenterStability) shall determine an acceptable amount of variability allowed in the lymphocyte cluster centroid X and Y coordinates.

7.2.5. An "L" shall indicate that the lymphocyte centroid was abnormally low or that the data was abnormally distributed in the TOF/FSH plot and that no data values are trustworthy.

7.2.6. A "D" shall indicate that a gross anomaly was detected in the sample flow rate and that no data values are trustworthy.

7.2.7. A "Z" flag shall indicate that the angle search returned a value less than zero and that the separation angle could not be reliably located and that no data values are trustworthy.

END OF DOCUMENT

Rev	ECO	Date	Description
A	E-0060	3/14/2005	Initial Release
B	E-0191	2/28/2006	Updates for New Lyse Project
C	E-0245	3/21/2006	Updates for revision 2.2.1
D	E-0310	7/18/2006	Updates or revision 2.2.6
E	E-0326	8/17/2006	Updates for revision 2.2.7
F	E-0341	8/24/2006	Updates for revision 2.2.8

Name	Signature	Date	Title	Approval Function
Jennifer Waite			Software Engineer	Originator
Andrea Desrosiers			Software Manager	Technical Review
Don Barry			Scientist	Technical Review
Kassey Kalukiewicz			Chief Operations Officer	Technical Review
Maurice Doire			Quality Assurance	QA and QC

1. Introduction

This document describes requirements for the Point Care Technologies AuRICA System Software sequences. The sequence is the part of the software that controls the optical, fluidic and data acquisition subsystems.

2. Scope

This document shall provide software requirements in enough depth to permit the construction of test cases that address all sequence software functions.

2.1. This document applies to software revision 2.2.8 which consists of the following changes to the last formally released revision 2.2.7.

2.1.1. Added the Extended Startup Sequence which performs the same fluidic movements as the Startup After Shipment Sequence.

2.1.2. Added the "Extended Startup Idle Time" and "Do Extended Startup" service parameters.

2.1.3. Added message to the beginning of the Run Patient sequence reminding the operator that blood samples must be analyzed within 10 hours of c ollection.

3. Applicable Documentation

- SRS-002 Software Requirements Specification
- SRS-003 System Hazard Analysis
- SRS-006 Algorithm Specification
- NL-0018 Software Status Report

4. Sequence Requirements

4.1. Sample Run

4.1.1. Barcode Sequence

4.1.1.1. The barcodes shall be read on the tubes in this order: Slot 4 (Lyse), Slot 3 (Quench), Slot 2 (Consumable), Slot 1 (if Patient Sample or CD4 Control Material).

4.1.1.2. For each tube, the spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

4.1.1.3. The vial shall not move the next tube under the spinner unless the barcode string read for that slot is of the format specified in Appendix E.

4.1.1.4. If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.1.1.5. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.1.2. Sanity Checks

4.1.2.1. The user shall be prompted to mix the patient or control sample tube before the sequence can proceed.

4.1.2.2. The user shall be reminded that blood samples must be analyzed within 10 hours of collection before the sequence can proceed.

4.1.2.3. Before any dilutions are made, the temperature of the heater block is checked to make sure it falls within the allowable range (37°C - 39°C).

4.1.2.4. If the temperature doesn't fall within the allowable range, the user shall be asked if he/she wants to abort the sequence or wait until the temperature becomes within range.

4.1.2.5. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.1.2.6. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.1.2.7. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.1.2.8. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.1.3. Making the Blood Dilution

4.1.3.1. The consumable tube shall be vented before any fluid is added to the tube.

4.1.3.2. If barcode checking is enabled, the Lyse tube shall be vented if it is a fresh tube (on its first use). If barcode checking is disabled, the Lyse tube shall be vented on every sample.

4.1.3.3. The mixer shall be lowered to an appropriate height to mix the blood or QC material tube.

4.1.3.4. A 15µl air gap is aspirated by the probe to provide a space between sheath and sample material.

4.1.3.5. The probe shall be lowered to an appropriate height to get a baseline capacitance reading before searching for the meniscus of the blood or QC material tube.

4.1.3.6. A set amount (service parameter) of material shall be aspirated from the meniscus of the sample tube.

4.1.3.7. If the meniscus of the sample material cannot be found, the user shall be alerted and the sequence shall abort.

4.1.3.8. If the sequence aborts during the dilution, the lines shall be flushed to get rid of any air and the system shall reset to bring all components back to the home position.

4.1.3.9. The system shall dispense the sample material along with the 15µl of air and a set amount (service parameter) of sheath at the bottom of the consumable tube.

4.1.3.10. The consumable tube shall then be spun back and forth at a set speed and duration (service parameters).

4.1.3.11. The consumable tube shall be left to incubate for a set duration (service parameter).

4.1.3.12. The consumable tube shall be spun back and forth at a set speed and duration (service parameters) at specified intervals (service parameter) during the incubation period.

4.1.4. Lysing

4.1.4.1. If the sum of the service parameters for Reagent B Volume, Air Volume, and Reagent A Volume exceeds the instrument's total path length, then an error message will be presented and the sequence will abort.

4.1.4.2. 635µl of sheath is loaded by the diluent syringe for the purpose of "charging" the fluid capacitor.

4.1.4.3. 635µl of sheath is dispensed into the fluid capacitor to "charge" it.

4.1.4.4. A set volume (service parameter) of Reagent C (sheath) is loaded by the diluent syringe.

4.1.4.5. A set volume (service parameter) of air is aspirated by the probe to provide a space between Reagent C and Reagent B.

4.1.4.6. A set volume (service parameter) of Reagent B shall be aspirated from the meniscus of the Quench Tube in the 3rd position of the vial.

4.1.4.7. The probes shall be lowered to the bottom of the Quench Tube and raised back to home to briefly rinse the vent hole.

4.1.4.8. A set volume (service parameter) of air is aspirated by the probe to provide a space between Reagent B and Reagent A.

4.1.4.9. A set volume (service parameter) of Reagent A shall be aspirated from the meniscus of the Lyse Tube in the 4th position of the vial.

4.1.4.10. If the meniscus of Reagent A or Reagent B cannot be found, the user shall be alerted and the sequence shall abort.

4.1.4.11. If the sequence aborts during the lysing, the lines shall be flushed to get rid of any air and the system shall reset to bring all components back to the home position. All waste will be dispensed back into the consumable tube.

4.1.4.12. The system shall dispense Reagent A at the bottom of the consumable tube at a set speed (service parameter).

4.1.4.13. The system shall dispense the air bubble at the bottom of the consumable tube at a set speed (service parameter).

4.1.4.14. If enabled (service parameter) the probe will aspirate and dispense a volume (service parameter) of fluid from the consumable tube at a set speed (service parameter) and will repeat the aspiration/dispensing a set number of times (service parameter).

4.1.4.15. The system shall wait a set number (service parameter) of seconds before dispensing Reagent B.

4.1.4.16. The system shall dispense Reagent B at the bottom of the consumable tube at a set speed (service parameter).

4.1.4.17. The system shall dispense the second air bubble at the bottom of the consumable tube at a set speed (service parameter).

4.1.4.18. The system shall dispense Reagent C at the bottom of the consumable tube at a set speed (service parameter).

4.1.5. Sample Aspiration and Data Acquisition

4.1.5.1. Prior to sample aspiration, the diluent syringe and the sample syringe shall be filled to close to their capacity with sheath.

4.1.5.2. The consumable tube shall be spun by the mixer.

4.1.5.3. A 60µl air gap is aspirated by the probe to provide a space between sheath and the diluted sample.

4.1.5.4. 210µl of diluted sample shall be aspirated from 200 steps above the bottom of the consumable tube.

4.1.5.5. The sample shall then be moved into the Manifold Block so it can be analyzed by the HGB sensors

4.1.5.6. The diluent syringe shall then start dispensing at a constant rate through the flowcell during the data acquisition

4.1.5.7. The sample syringe shall boost the sample quickly to the flowcell and then dispense slowly during the data acquisition

4.1.5.8. Laser data shall be acquired on the sample at a set rate (service parameter) for a set duration (service parameter)

4.1.5.9. The system shall dispense all leftover waste material back into the consumable tube

4.1.5.10. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.1.5.11. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.1.5.12. The system shall do a total flush and reset (return all instrument components to home position) to ready the instrument for the next sample.

4.2. Startup

4.2.1. System Setup

4.2.1.1. The heater shall be enabled

4.2.1.2. The heater low temperature shall be set to 37°C

4.2.1.3. The heater high temperature shall be set to 38°C

4.2.1.4. The temperature controller shall be started

4.2.1.5. The Instrument's real time clock shall be set to the PC's current time

4.2.2. Sanity Checks

4.2.2.1. The user shall be prompted to insert the sheath reagent bottle

4.2.2.2. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.2.2.3. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.2.2.4. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.2.2.5. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.2.3. Barcode Checking

4.2.3.1. The only barcode that shall be read is on the Waste tube in Slot 3. There are no other tubes present during Startup.

4.2.3.2. The spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

4.2.3.3. The sequence shall not continue unless the barcode string read for Slot 3 is of the format specified in Appendix E.

4.2.3.4. If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.2.3.5. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.2.4. Startup Cycle

4.2.4.1. The system shall cycle 9mL of sheath through the flowcell using the diluent syringe.

4.2.4.2. The system shall push 2mL of sheath through the probe.

4.2.4.3. The system shall perform 1 prime cycle (see 4.4.1).

4.2.4.4. The probes shall be lowered to the bottom of the Waste Tube and raised back to home to briefly rinse the vent hole.

4.2.4.5. The system shall return all instrument components to the home position.

4.3. Prime

4.3.1. Prime Cycle

4.3.1.1. The system shall push 2mL of sheath through the probe into the Waste Tube.

4.3.1.2. The system shall push 2.5mL of sheath through both paths of the flowcell at once.

4.3.1.3. The system shall push 475µl of sheath into the fluid capacitor to "charge" it.

4.3.1.4. The system shall pull 20µl with the Diluent Syringe while valves F, E, and B are open (fluid capacitor is discharging into the flowcell at the same time). This will help get rid of air bubbles in the flowcell.

4.3.1.5. The system will push 150µl (home the diluent syringe) through both paths of the flowcell at once.

4.3.1.6. The system shall return all instrument components to the home position.

4.4. Clean

4.4.1. Sanity Checks

4.4.1.1. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.4.1.2. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.4.1.3. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.4.1.4. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.4.2. Barcode Checking

4.4.2.1. The barcodes shall be read on the tubes in this order: Slot 4 (Cleaner), Slot 3 (Waste). There are no other tubes present during a Clean Sequence.

4.4.2.2. For each tube, the spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

4.4.2.3. The vial shall not move the next tube under the spinner unless the barcode string read for that slot is of the format specified in Appendix E.

4.4.2.4. If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.4.2.5. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.4.3. Clean Cycle

4.4.3.1. The vent needle shall be cleaned by moving the probes into the Clean Tube (far enough so the vent hole is emerged) and aspirating and dispensing cleaner fluid with the sample probe. This will push and pull cleaner fluid into and out of the vent probe.

4.4.3.2. To make sure no fluid is left in the vent probe, the probes shall be moved into the air above the liquid in the Clean Tube and air shall be aspirated and dispensed by the sample probe. This will force air into and out of the vent probe.

4.4.3.3. A 60µl air gap shall be aspirated by the probe to provide a space between sheath and cleaner fluid.

4.4.3.4. The Clean Tube in slot 4 shall be spun by the mixer.

4.4.3.5. 600µl of cleaner fluid shall be aspirated from the meniscus of the Clean Tube.

4.4.3.6. If 600µl cleaner fluid + 60µl air exceeds the instrument's total path length, then the volume of cleaner fluid aspirated will be decreased so that it is under the total path length volume

4.4.3.7. If the meniscus of the cleaner fluid cannot be found, the user shall be alerted and the sequence shall abort.

4.4.3.8. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the manifold block and the probe.

4.4.3.9. 100µl of cleaner fluid shall be dispensed through the sample path of the flowcell

4.4.3.10. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell

4.4.3.11. During the soak period, the probes shall rest on the bottom of the Cleaning Tube so that the vent hole is soaked.

4.4.3.12. 100µl more cleaner fluid shall be dispensed through the sample path of the flowcell

4.4.3.13. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell

4.4.3.14. During the soak period, the probes shall rest on the bottom of the Cleaning Tube so that the vent hole is soaked.

4.4.3.15. 800µl of sheath shall be flushed through the manifold and the probe into the Waste Tube.

4.4.3.16. The system shall perform 2 prime cycles (see 4.4.1) to rinse out the rest of the cleaner fluid from the system.

4.5. Shutdown

4.5.1. Sanity Checks

4.5.1.1. The user shall be prompted to insert the Shutdown Solution bottle.

4.5.1.2. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.5.1.3. The fluid level on the Shutdown Solution bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the Shutdown Solution bottle before the sequence can continue.

4.5.1.4. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.5.1.5. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.5.2. Barcode Checking

4.5.2.1. The barcodes shall be read on the tubes in this order: Slot 4 (Cleaner), Slot 3 (Waste). There are no other tubes present during a Shutdown Sequence.

4.5.2.2. For each tube, the spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

4.5.2.3. The vial shall not move the next tube under the spinner unless the barcode string read for that slot is of the format specified in Appendix E.If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.5.2.4. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.5.3. Shutdown Cycle

4.5.3.1. A 60µl air gap shall be aspirated by the probe to provide a space between sheath and cleaner fluid.

4.5.3.2. The Clean Tube in slot 4 shall be spun with the mixer.

4.5.3.3. 600µl of cleaner fluid shall be aspirated from the meniscus of the Clean Tube.

4.5.3.4. If 600µl cleaner fluid + 60µl air exceeds the instrument's total path length, then the volume of cleaner fluid aspirated will be decreased so that it is under the total path length volume

4.5.3.5. If the meniscus of the cleaner fluid cannot be found, the user shall be alerted and the sequence shall abort.

4.5.3.6. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the manifold block and the probe.

4.5.3.7. 100µl of cleaner fluid shall be dispensed through the sample path of the flowcell

4.5.3.8. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.5.3.9. The fluid in the flowcell shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.5.3.10. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.5.3.11. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.5.3.12. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.5.3.13. 100µl more cleaner fluid shall be dispensed through the sample path of the flowcell

4.5.3.14. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.5.3.15. The fluid in the flowcell shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.5.3.16. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.5.3.17. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.5.3.18. During the four soak periods, the probes shall rest on the bottom of the Cleaning Tube so that the vent hole is soaked.

4.5.3.19. 800µl of Shutdown Solution shall be flushed through the manifold and the probe into the Waste Tube.

4.5.3.20. The vent needle shall be rinsed by moving the probes into the Clean Tube (far enough so the vent hole is emerged) and aspirating and dispensing cleaner fluid with the sample probe. This will push and pull cleaner fluid into and out of the vent probe.

4.5.3.21. To make sure no fluid is left in the vent probe, the probes shall be moved into the air above the liquid in the Clean Tube and air shall be aspirated and dispensed by the sample probe. This will force air into and out of the vent probe.

4.5.3.22. The system shall then perform 2 prime cycles (see 4.4.1).

4.5.3.23. After each prime, as a safeguard, the Waste Tube shall be checked to see if it has been overfilled and if so, the operator shall be notified.

4.5.3.23.1. If the Waste Tube is full, the operator shall have a chance to insert a new Waste Tube and continue with the Shutdown Cycle.

4.5.3.24. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.5.3.25. The fluid level on the Shutdown Solution bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the Shutdown Solution bottle before the sequence can continue.

4.5.3.26. The system shall push 1mL of Shutdown solution through the probe into the Waste Tube.

4.5.3.27. The system shall cycle 18mL of Shutdown solution through the flowcell using the diluent syringe.

4.5.3.28. If end-of-day shutdown cycle is being performed, the probe shall be lowered to the bottom of the Clean Tube and 50µl of cleaning solution shall be aspirated.

4.5.3.29. If end-of-day shutdown cycle is being peformed, the probe shall be left to soak at the bottom of the Clean Tube. Otherwise, the system shall return all instrument components to the home position.

4.6. Shutdown for Shipment

4.6.1. Sanity Checks

4.6.1.1. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.6.1.2. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.6.1.3. The user shall be prompted to replace the sheath bottle with the Shutdown Solution bottle

4.6.1.4. The fluid level on the Shutdown Solution bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the Shutdown Solution bottle before the sequence can continue.

4.6.1.5. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.6.1.6. The user shall be prompted to insert a waste tube into position three of the vial block.

4.6.2. Barcode Checking

4.6.2.1. The only barcode that shall be read is on the Waste tube in Slot 3. There are no other tubes present during a Shutdown For Shipment.

4.6.2.2. The spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

EXHIBIT 3 – 2

4.6.2.3. The sequence shall not continue unless the barcode string read for Slot 3 is of the format specified in Appendix E.If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.6.2.4. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.6.3. Shutdown for Shipment Cycle

4.6.3.1. The system shall then perform 1 prime cycle (see 4.4.1).

4.6.3.2. The user shall be prompted to remove the cap from the Shutdown Solution bottle so that the probes are in the air.

4.6.3.3. The fluid level on the Shutdown Solution bottle shall be checked to make sure it is empty. If it is not empty, the user shall be prompted to remove the cap from the Shutdown Solution bottle so that the probes are in the air.

4.6.3.4. The system shall then perform 1 prime cycle (see 4.4.1).

4.6.3.5. The user shall be prompted to remove the used system filter beneath the bottle tray and install a new filter.

4.6.3.6. The user shall be prompted to remove all the tubes from the vial rack.

4.6.3.7. The spinner and the barcode reader shall be used to verify that there are no tubes left in the vial rack.

4.6.3.8. The user shall be prompted to replace the Waste and Shutdown Solution bottles with dry bottles.

4.6.3.9. The fluid level on the Shutdown Solution bottle shall be checked to make sure it is empty. If it is not empty, the user shall be prompted to replace the Shutdown Solution bottle with a dry bottle.

4.6.3.10. The fluid level on the waste bottle shall be checked to make sure it is not full. If it is full, the user shall be prompted to replace the Waste bottle with a dry bottle.

4.6.3.11. The user shall be notified that the Shutdown Cycle is complete before the software exits.

4.7. Startup After Shipment/Extended Startup

4.7.1. System Setup

4.7.1.1. The heater shall be enabled

4.7.1.2. The heater low temperature shall be set to 37°C

4.7.1.3. The heater high temperature shall be set to 38°C

4.7.1.4. The temperature controller shall be started

4.7.1.5. The Instrument's real time clock shall be set to the PC's current time

4.7.2. Sanity Checks

4.7.2.1. The user shall be prompted to insert the sheath reagent bottle

4.7.2.2. The user shall be prompted to insert the Waste bottle containing a disinfectant tablet only if a Startup After Shipment is being run.

4.7.2.3. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.7.2.4. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.7.2.5. The vial block lid sensor shall be checked to see if the lid is open. If the lid is open, the user shall be prompted to close the lid before the sequence can continue.

4.7.2.6. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.7.3. Barcode Checking

4.7.3.1. The barcodes shall be read on the tubes in this order: Slot 4 (Cleaner), Slot 3 (Waste). There are no other tubes present during a Shutdown Sequence.

4.7.3.2. For each tube, the spinner shall come down and spin the tube while the barcode reader reads the barcode string from the label on the tube.

4.7.3.3. The vial shall not move the next tube under the spinner unless the barcode string read for that slot is of the specified in Appendix E..

4.7.3.4. If the barcode reader is unable to read the barcode string, it shall try to read the barcode 4 more times.

4.7.3.5. If the barcode reader is unable to read the barcode string on the tube after 5 tries, the user shall be alerted and the sequence shall be aborted.

4.7.4. Startup After Shipment/Extended Startup Cycle

4.7.4.1. The system shall perform 2 prime cycles (see 4.4.1).

4.7.4.2. After each prime, as a safeguard, the Waste Tube shall be checked to see if it has been overfilled and if so, the operator shall be notified.

4.7.4.2.1. If the Waste Tube is full, the operator shall have a chance to insert a new Waste Tube and continue with the Shutdown Cycle.

4.7.4.3. A 60µl air gap shall be aspirated by the probe to provide a space between sheath and cleaner fluid.

4.7.4.4. The Clean Tube in slot 4 shall be spun by the mixer.

4.7.4.5. 600µl of cleaner fluid shall be aspirated from the meniscus of the Clean Tube.

4.7.4.6. If 600µl cleaner fluid + 60µl air exceeds the instrument's total path length, then the volume of cleaner fluid aspirated will be decreased so that it is under the total path length volume

4.7.4.7. If the meniscus of the cleaner fluid cannot be found, the user shall be alerted and the sequence shall abort.

4.7.4.8. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the manifold block and the probe.

4.7.4.9. 100µl of cleaner fluid shall be dispensed through the sample path of the flowcell

4.7.4.10. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.7.4.11. The fluid in the flowcell shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.7.4.12. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.7.4.13. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.7.4.14. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.7.4.15. 100µl more cleaner fluid shall be dispensed through the sample path of the flowcell

4.7.4.16. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.7.4.17. The fluid in the flowcell shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.7.4.18. The fluid in the manifold block shall be agitated by pushing and pulling 20µl with the diluent syringe.

4.7.4.19. The system shall wait for a set amount of time (service parameter) to allow the cleaner fluid to soak in the flowcell.

4.7.4.20. During the four soak periods, the vent needle shall be cleaned. See sections 4.5.3.1 and 4.5.3.2.

4.7.4.21. During the four soak periods, after the vent clean, the probes shall rest on the bottom of the Cleaning Tube so that the vent hole is soaked.

4.7.4.22. 800µl of sheath shall be flushed through the manifold and the probe into the Waste Tube.

4.7.4.23. The system shall then perform 2 prime cycles (see 4.4.1).

4.7.4.24. After each prime, as a safeguard, the Waste Tube shall be checked to see if it has been overfilled and if so, the operator shall be notified.

4.7.4.24.1. If the Waste Tube is full, the operator shall have a chance to insert a new Waste Tube and continue with the Shutdown Cycle.

4.7.4.25. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.7.4.26. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.7.4.27. The system shall cycle 18mL of sheath through the flowcell using the diluent syringe.

4.7.4.28. The system shall return all instrument components to the home position.

4.8. Automatic Maintenance

4.8.1. Sanity Checks

4.8.1.1. The fluid level on the waste bottle shall be checked to see if it is full. If it is full, the user shall be prompted to empty the waste bottle before the sequence can continue.

4.8.1.2. The fluid level on the sheath bottle shall be checked to see if it is empty. If it is empty, the user shall be prompted to replace the sheath bottle before the sequence can continue.

4.8.1.3. The instrument cover sensor shall be checked to see if the cover has been taken off. If the cover is off, the user shall be prompted to replace the cover before the sequence can continue.

4.8.2. Automatic Maintenance Cycle

4.8.2.1. The system shall load 50µl of sheath with the diluent syringe

4.8.2.2. The system shall push 50µl of sheath with the diluent syringe into sheath path of flowcell

4.8.2.3. The system shall load 50µl of sheath with the sample syringe

4.8.2.4. The system shall push 50µl of sheath with the sample syringe into sample path of flowcell

4.8.2.5. The system shall open valve C and close it to make sure it's exercised

4.8.2.6. If it is sensed that the vial block lid is closed, the vial shall be moved so that the 3rd position of the vial is under the probes.

4.8.2.7. The probes shall be lowered down to the bottom of the block and then raised back up to briefly rinse the vent hole if the Waste or Quench Tube happens to be in the 3rd position when this sequence is executed.

4.8.2.8. The system shall return all instrument components to their home position.

Appendix A: Service Parameter List

Name	Default Value	Units	Description
Simulated Mode	0	0 off, 1 random, 2 analysis, 3 import	0=no simulation, 1=random results, 2=analyze test.fcs file, 3=import results from results.txt file
Startup Mode	1	1 with prime, 0 no prime	1=run full startup cycle, 0=only turn on heater but don't move any fluid
Development Mode	0	1 dev mode, 0 customer mode	1=show verbose status messages during cycle
Check Barcodes	1	1 on, 0 off	
Check Bottles	7	0 off,1 ss, 2 w, 3 w+ss, 4 s, 5 s+ss, 6 s+w, 7 s+w+ss	0=no bottle checking, 1=check shutdown solution only, 2=check waste only, 3=check waste and shutdown solution, 4=check sheath only, 5=check sheath and shutdown solution, 6=check sheath and waste, 7=check all bottles
Locale	1	0 domestic, 1 international	0=abort test on expired tubes and show "for research only" on all screens
Heater Mode	1	1 heater on, 0 heater off	
Incubation Time	240	seconds	incubation time after 1st dilution of patient test
Sample Volume	25	µl	volume of blood to use in 1st dilution of patient test
Sheath Volume	25	µl	volume of sheath to use in 1st dilution of patient test
CD4 Control Incubation Time	900	seconds	incubation time after 1st dilution of CD4 control test
CD4 Control Sample Volume	25	µl	volume of control material to use in 1st dilution of CD4 control test
CD4 Control Sheath Volume	25	µl	volume of sheath to use in 1st dilution of CD4 control test
External Control Incubation Time	0	seconds	incubation time after 1st dilution of External control test
External Control Sample Volume	25	µl	volume of control material to use in 1st dilution of External control test

External Control Sheath Volume	25	µl	volume of sheath to use in 1st dilution of External control test
Volume A	400	µl	Lyse Reagent A
Volume B	300	µl	Lyse Reagent B
Volume C	0	µl	Lyse Reagent C (sheath)
Dispense A Speed	200	1-600 (keep FAR away from the extremities)	speed of dispensing Reagent A
Dispense B Speed	300	1-600 (keep FAR away from the extremities)	speed of dispensing Reagent B
Dispense C Speed	550	1-600 (keep FAR away from the extremities)	speed of dispensing Reagent C
Air 1 Volume	75	µl (bubble between C & B)	volume of air gap between Reagent C & B
Air 1 Speed	200	1-600 (keep FAR away from the extremities)	speed of dispensing air gap 1
Air 2 Volume	75	µl (bubble between B & A)	volume of air gap between Reagent B & A
Air 2 Speed	200	1-600 (keep FAR away from the extremities)	speed of dispensing air gap 2
Wait Time	0	seconds to wait after dispensing A and air	
Do Mix	0	1 mix (with probe only) during A dispense, 0 don't	after dispensing Reagent A, do mix by aspirating and dispensing fluid with probe
Probe Mix Speed	550	1-600 (keep FAR away from the extremities)	speed to aspirate and dispense during probe mix
Probe Mix Volume	250	µl	volume and aspirate and dispense during probe mix
Probe Mix Repeat	2	number of times to aspirate/dispense with probe	
Analyze Time	35000	milliseconds	amount of time to acquire laser data
Sample Rate	0.76	µl/s	Speed of syringe during data acquisition ("WBCSampleRate" parameter from instrument database)
Fifo Time	300	milliseconds	Time between Fifo reads during data acquisition
Gold Mix Speed	150	1 - 499	Speed at which to spin gold tube after 1st dilution of a patient test
Gold Mix Forward Time	5	tenths of seconds	duration for forward spin
Gold Mix Reverse Time	5	tenths of seconds	duration of backward spin
Gold Mix Repeat	60	number of times to do forward/backward motion	

Gold Mix Interval	60	seconds (mix every x seconds during incubation)	do mix using "Gold Mix" parameters at specified interval during incubation
CD4 Control Gold Mix Speed	150	1 - 499	Speed at which to spin gold tube after 1st dilution of a CD4 Control test
CD4 Control Gold Mix Forward Time	5	tenths of seconds	duration for forward spin
CD4 Control Gold Mix Reverse Time	5	tenths of seconds	duration of backward spin
CD4 Control Gold Mix Repeat	60	number of times to do forward/backward motion	
CD4 Control Gold Mix Interval	60	seconds (mix every x seconds during incubation)	do mix using "CD4 Control Gold Mix" parameters at specified interval during incubation
External Control Gold Mix Speed	150	1 - 499	Speed at which to spin gold tube after 1st dilution of an External Control test
External Control Gold Mix Forward Time	5	tenths of seconds	duration for forward spin
External Control Gold Mix Reverse Time	5	tenths of seconds	duration of backward spin
External Control Gold Mix Repeat	60	number of times to do forward/backward motion	
External Control Gold Mix Interval	60	seconds (mix every x seconds during incubation)	do mix using "External Control Gold Mix" parameters at specified interval during incubation
Clean Cycle Run Count	10	number of tests	number of tests before Clean cycle is enforced
Clean Tube Run Count	4	number of tests	number of tests before a new Clean Tube is required
Lyse Tube Run Count	10	number of tests	number of tests before a new Lyse Tube is required
Quench Tube Run Count	5	number of tests	number of tests before a new Quench Tube is required
CD4 Control Tube Run Count	20	number of tests	number of tests before a new CD4 Control Tube is required.
Heater High Temp	38	degrees C	
Heater Low Temp	37	degrees C	

Max Temp	39	degrees C	maximum Heater High Temp value allowable
Max Lyse Capacitance Threshold	100	units of capacitance	Threshold reading must be <= this number when finding lyse level
Lyse Capacitance Threshold Delta	400	units of capacitance	reading in lyse must be >= threshold + this number
Max Blood Capacitance Threshold	100	units of capacitance	Threshold reading must be <= this number when finding blood (or control material) level
Blood Capacitance Threshold Delta	150	units of capacitance	reading in blood (or control material) must be >= threshold + this number
Max Quench Capacitance Threshold	100	units of capacitance	Threshold reading must be <= this number when finding quench level
Quench Capacitance Threshold Delta	400	units of capacitance	reading in quench must be >= threshold + this number
Force Shutdown	1	1 enforced shutdown on, 0 off	enforce shutdown before running any other cycle if instrument has been sitting idle for more than "Forced Shutdown Idle Time"
Forced Shutdown Idle Time	8	hours	
Do Exercise Cycle	1	1 do auto exercise cycle, 0 off	Run Automatic Exercise Cycle every "Exercise Cycle Idle Time" minutes
Exercise Cycle Idle Time	120	minutes	
Clean Needle Soak Time	135	seconds	amount of time to soak needle and manifold during Clean Cycle
Clean Flowcell Soak Time	40	seconds (divided into 2 parts)	amount of time to soak flowcell during Clean Cycle (divided into two chunks of time)
Shutdown Needle Soak Time	135	seconds	amount of time to soak needle and manifold during Shutdown and Startup After Shipment Cycles
Shutdown Flowcell Soak Time	3600	seconds (divided into 4 parts)	amount of time to soak flowcell during Shutdown and Startup After Shipment Cycles (divided into four chunks of time)
WBC Offset	0	counts	patient algorithm set up
WBC Coefficient	1.0	decimal	patient algorithm set up
LYM Offset	0	counts	patient algorithm set up

LYM Coefficient	1.0	decimal	patient algorithm set up
CD4 Offset	0	counts	patient algorithm set up
CD4 Coefficient	1.0	decimal	patient algorithm set up
X Center Max	100	bins	patient algorithm set up
X Center Min	60	bins	patient algorithm set up
Y Center Max	55	bins	patient algorithm set up
Y Center Min	10	bins	patient algorithm set up
Lymph X Default	70	bins	patient algorithm set up
Lymph Y Default	40	bins	patient algorithm set up
Default Height	20	bins	patient algorithm set up
Default Width	16	bins	patient algorithm set up
FSL Thresh	64	bins	patient algorithm set up
FSH Thresh	64	bins	patient algorithm set up
Center Stability	0	integer	patient algorithm set up
Max Events	35000	events	patient algorithm set up
CD4 Control Results Mode	1	0 cd4# only, 1 cd4N all, 2 cd4L all, 3 cd4N+cd4L all	0=report CD4# only for both low and normal, 1=report all results for normal and only CD4# for low, 2=report all results for low and only CD4# for normal, 3=report all results for low and normal
CD4 Control WBC Offset	0	counts	CD4 control algorithm set up
CD4 Control WBC Coefficient	1.0	decimal	CD4 control algorithm set up
CD4 Control LYM Offset	0	counts	CD4 control algorithm set up
CD4 Control LYM Coefficient	1.0	decimal	CD4 control algorithm set up
CD4 Control CD4 Offset	0	counts	CD4 control algorithm set up
CD4 Control CD4 Coefficient	1.0	decimal	CD4 control algorithm set up
CD4 Control X Center Max	75	bins	CD4 control algorithm set up
CD4 Control X Center Min	45	bins	CD4 control algorithm set up
CD4 Control Y Center Max	120	bins	CD4 control algorithm set up
CD4 Control Y Center Min	0	bins	CD4 control algorithm set up
CD4 Control Lymph X Default	70	bins	CD4 control algorithm set up

CD4 Control Lymph Y Default	60	bins	CD4 control algorithm set up
CD4 Control Default Height	18	bins	CD4 control algorithm set up
CD4 Control Default Width	16	bins	CD4 control algorithm set up
CD4 Control FSL Thresh	64	bins	CD4 control algorithm set up
CD4 Control FSH Thresh	64	bins	CD4 control algorithm set up
CD4 Control Center Stability	0	integer	CD4 control algorithm set up
CD4 Control Max Events	35000	events	CD4 control algorithm set up
External Control WBC Offset	0	counts	External control algorithm set up
External Control WBC Coefficient	1.0	decimal	External control algorithm set up
External Control LYM Offset	0	counts	External control algorithm set up
External Control LYM Coefficient	1.0	decimal	External control algorithm set up
External Control CD4 Offset	0	counts	External control algorithm set up
External Control CD4 Coefficient	1.0	decimal	External control algorithm set up
External Control X Center Max	75	bins	External control algorithm set up
External Control X Center Min	0	bins	External control algorithm set up
External Control Y Center Max	120	bins	External control algorithm set up
External Control Y Center Min	0	bins	External control algorithm set up
External Control Lymph X Default	70	bins	External control algorithm set up
External Control Lymph Y Default	60	bins	External control algorithm set up
External Control Default Height	18	bins	External control algorithm set up
External Control Default Width	16	bins	External control algorithm set up
External Control FSL Thresh	64	bins	External control algorithm set up
External Control FSH Thresh	64	bins	External control algorithm set up
External Control Center Stability	0	integer	External control algorithm set up
External Control Max Events	35000	events	External control algorithm set up
Report Mode	1	1 norm/calib results, 0 raw results	1=report calibrabed results, 0=report raw results
Show Plots	0	0 off 1 on (dev mode must = 1)	1=show dot plot during analysis, 0 = don't. "Development Mode" must be 1 for this parameter to take affect

Auto Print	0	0 off 1 on (dev mode must = 1)	1=auto print dot plot, 0 = don't. "Development Mode" and "Show Plots" must be 1 for this parameter to take affect
WBC Reportable Limit Low	1	10^3 cells/µl	reportable range low limit for WBC
WBC Reportable Limit High	20	10^3 cells/µl	reportable range high limit for WBC
LYM Reportable Limit Low	0.3	10^3 cells/µl	reportable range low limit for LYM
LYM Reportable Limit High	6	10^3 cells/µl	reportable range high limit for LYM
LYM Percent Reportable Limit Low	0.1	percent	reportable range low limit for LYM%
LYM Percent Reportable Limit High	75	percent	reportable range high limit for LYM%
CD4 Reportable Limit Low	50	cells/µl	reportable range low limit for CD4
CD4 Reportable Limit High	3000	cells/µl	reportable range high limit for CD4
CD4 Percent Reportable Limit Low	0	percent	reportable range low limit for CD4%
CD4 Percent Reportable Limit High	80	percent	reportable range high limit for CD4%
Needle Top Height	#	half steps	"NeedleCal" parameter from Instrument database
Needle Bottom Height	#	half steps	"NeedleBottomHalfStepsFromHome" parameter from Instrument database
Path Length Volume	#	µl	"PathLengthVol" parameter from instrument database
Manifold To FlowCell Path Volume	#	µl	"ManifoldFlowCellPathVol" parameter from instrument database
FSH Peak Gain	#	total gain	synced with Instrument database gain settings
FSL Peak Gain	#	total gain	synced with Instrument database gain settings
RAS Peak Gain	#	total gain	synced with Instrument database gain settings
EXT Peak Gain	#	total gain	synced with Instrument database gain settings
Signal	#	total voltage	synced with instrument database DAC settings
TOF Reference	#	total voltage	synced with instrument database DAC settings
Patient Sample Sequence Time	15	minutes	estimated time of patient sample sequence
CD4 Control Sequence Time	18	minutes	estimated time of CD4 control sequence
External Control Sequence Time	18	minutes	estimated time of external control sequence
Startup Sequence Time	7	minutes	estimated time startup sequence

Clean Sequence Time	10	minutes	estimated time of clean sequence
Shutdown Sequence Time	79	minutes	estimated time of shutdown sequence
Startup After Shipment Sequence Time	82	minutes	estimated time of Startup After Shipment Sequence
Shutdown For Shipment Sequence Time	9	minutes	estimated time of Shutdown For Shipment Sequence
Enable Long Time Outs	0	0=TO based on cmd, 1=100s TO for all cmds	0 = appropriate timeout value set for each command sent to flow cytometer. 1 = 100s timeout value set for all commands sent to flow cytometer
External Control Tube Mode	0	0=75mm, 1=60mm	0 = 75mm external control tube height, 1 = 60mm external control tube height
Max Angle	400	bins	Algorithm set up (all sample types)
Extended Startup Idle Time	96	Hours	Time limit that instrument can be shut down before operator is forced to run an Extended Startup Cycle
Do Extended Startup	1	1 do extended startup, 0 off	Do/do not force operator to run an Extended Startup Cycle when the instrument has been shut down for at least the "Extended Startup Idle Time"

Appendix B: cluster1.ini Parameters

```
[DXBP]
ID= 1234                    // last four digits of instrument serial# or 1234 if simulation
[Modes]
SampleType= 1               // 1=patient, 3=CD4CtrlNorm, 8=ExtCtrl
ReportMode= 1               // "Report Mode" service parameter
Silent= 1                   // 1 = Round results w/o display, 0 = plot data w/o rounding
                            // ("Show Plots" service parameter)
DwellTime= 0                // Display Time 1 - 60000 seconds (If Silent = 0, then
                            // DwellTime = 30000
BatchPrint= 0               // "Auto Print" service parameter

[Sample]                    // patient sample section
Wbc_Offset= 0               // "WBC Offset" service parameter * 100
Wbc_Coeff= 100              // "WBC Coefficient" service parameter * 100
Lym_Offset= 0               // "LYM Offset" service parameter * 100
Lym_Coeff= 100              // "LYM Coefficient" service parameter * 100
Cd4_Offset= 0               // "CD4 Offset" service parameter * 100
Cd4_Coeff= 100              // "CD4 Coefficient" service parameter * 100
X_Center_Max= 100           // "X Center Max" service parameter
X_Center_Min= 60            // "X Center Min" service parameter
Y_Center_Max= 55            // "Y Center Max" service parameter
Y_Center_Min= 10            // "Y Center Min" service parameter
Lymph_X_Default= 70         // "Lymph X Default" service parameter
Lymph_Y_Default= 40         // "Lymph Y Default" service parameter
Default_Height= 20          // "Default Height" service parameter
DefaultWidth= 16            // "Default Width" service parameter
FSL_Thresh= 64              // "FSL Thresh" service parameter
FSH_Thresh= 64              // "FSH Thresh" service parameter
Center_Stability= 0         // "Center Stability" service parameter
Max_Events= 35000           // "Max Events" service parameter
Sample_Volume= 25           // "Sample Volume" service parameter
Sheath_Volume= 25           // "Sheath Volume" service parameter
Lyse_Volume= 700            // "Volume A" service parameter + "Volume B" service parameter
+ "Volume C" service parameter
Max_Angle= 300              // "Max Angle" service parameter

[Control]                   // CD4 Control section
Wbc_Offset= 0               // "CD4 Control WBC Offset" service parameter * 100
Wbc_Coeff= 100              // "CD4 Control WBC Coefficient" service parameter * 100
Lym_Offset= 0               // "CD4 Control LYM Offset" service parameter * 100
Lym_Coeff= 100              // "CD4 Control LYM Coefficient" service parameter * 100
Cd4_Offset= 0               // "CD4 Control CD4 Offset" service parameter * 100
Cd4_Coeff= 100              // "CD4 Control CD4 Coefficient" service parameter * 100
X_Center_Max= 75            // "CD4 Control X Center Max" service parameter
X_Center_Min= 45            // "CD4 Control X Center Min" service parameter
Y_Center_Max= 120           // "CD4 Control Y Center Max" service parameter
Y_Center_Min= 0             // "CD4 Control Y Center Min" service parameter
Lymph_X_Default= 70         // "CD4 Control Lymph X Default" service parameter
Lymph_Y_Default= 60         // "CD4 Control Lymph Y Default" service parameter
Default_Height= 18          // "CD4 Control Default Height" service parameter
DefaultWidth= 16            // "CD4 Control Default Width" service parameter
FSL_Thresh= 64              // "CD4 Control FSL Thresh" service parameter
FSH_Thresh= 64              // "CD4 Control FSH Thresh" service parameter
Center_Stability= 0         // "CD4 Control Center Stability" service parameter
Max_Events= 35000           // "CD4 Control Max Events" service parameter
```

```
Sample_Volume= 25          // "CD4 Control Sample Volume" service parameter
Sheath_Volume= 25          // "CD4 Control Sheath Volume" service parameter
Lyse_Volume= 700           // "Volume A" service parameter + "Volume B" service parameter
+ "Volume C" service parameter
Max_Angle= 300             // "Max Angle" service parameter


[ExternalControl]          // External Control section
Wbc_Offset= 0              // "External Control WBC Offset" service parameter * 100
Wbc_Coeff= 100             // "External Control WBC Coefficient" service parameter * 100
Lym_Offset= 0              // "External Control LYM Offset" service parameter * 100
Lym_Coeff= 100             // "External Control LYM Coefficient" service parameter * 100
Cd4_Offset= 0              // "External Control CD4 Offset" service parameter * 100
Cd4_Coeff= 100             // "External Control CD4 Coefficient" service parameter * 100
X_Center_Max= 75           // "External Control X Center Max" service parameter
X_Center_Min= 45           // "External Control X Center Min" service parameter
Y_Center_Max= 120          // "External Control Y Center Max" service parameter
Y_Center_Min= 0            // "External Control Y Center Min" service parameter
Lymph_X_Default= 70        // "External Control Lymph X Default" service parameter
Lymph_Y_Default= 60        // "External Control Lymph Y Default" service parameter
Default_Height= 18         // "External Control Default Height" service parameter
DefaultWidth= 16           // "External Control Default Width" service parameter
FSL_Thresh= 64             // "External Control FSL Thresh" service parameter
FSH_Thresh= 64             // "External Control FSH Thresh" service parameter
Center_Stability= 0        // "External Control Center Stability" service parameter
Max_Events= 35000          // "External Control Max Events" service parameter
Sample_Volume= 25          // "External Control Sample Volume" service parameter
Sheath_Volume= 25          // "External Control Sheath Volume" service parameter
Lyse_Volume= 700           // "Volume A" service parameter + "Volume B" service parameter
+ "Volume C" service parameter
Max_Angle= 300             // "Max Angle" service parameter
```

Appendix C: FCS File Keywords

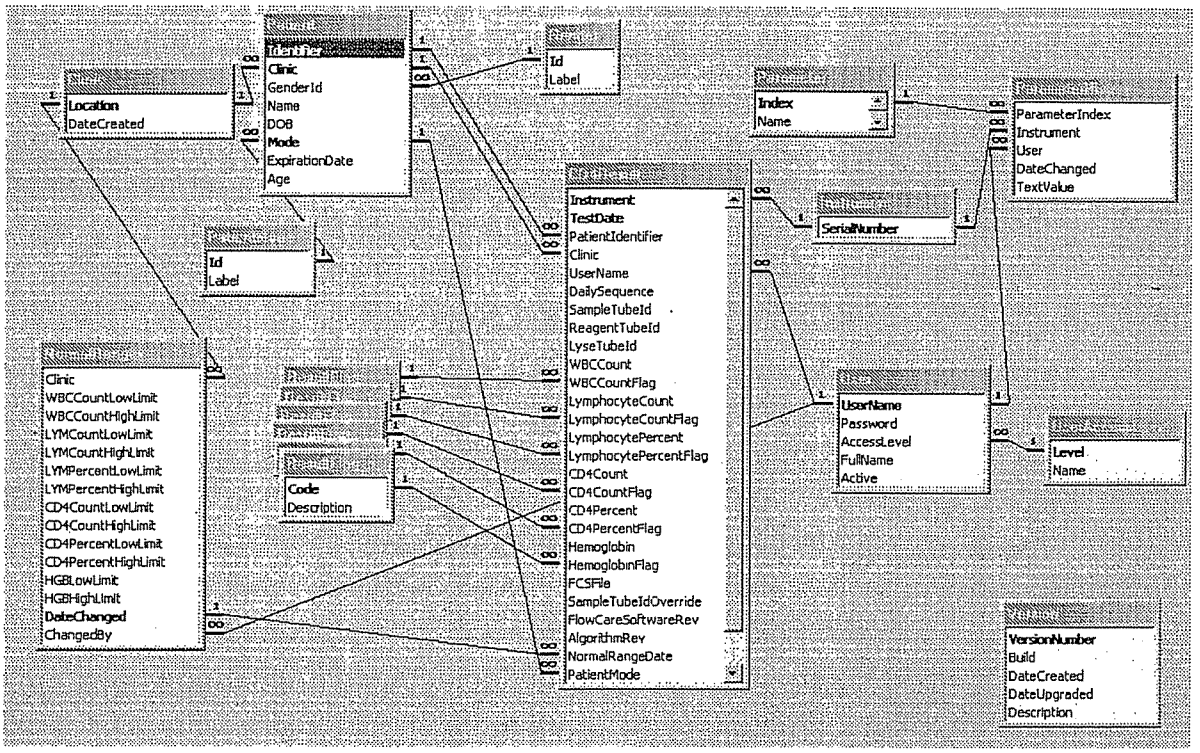
Keyword	Value	Description
IDXChannels	9	number of channels
PCTAppName	AuRICA	
PCTAppRevision	2.2.8	
IDXHGBRedLightDAC	#	hardware setting
IDXHGBRedLightADC	#	hardware setting
IDXHGBRedDarkADC	#	hardware setting
IDXHGBYellowLightADC	#	hardware setting
IDXHGBYellowDarkADC	#	hardware setting
IDXHGBGreenLightDAC	#	hardware setting
IDXHGBGreenLightADC	#	hardware setting
IDXHGBGreenDarkADC	#	hardware setting
IDXHGBBlueLightDAC	#	hardware setting
IDXHGBBlueLightADC	#	hardware setting
IDXHGBBlueDarkADC	#	hardware setting
IDXHGBRedADCData[0-59]	#	sample HGB data
IDXHGBYellowADCData[0-59]	#	sample HGB data
IDXHGBGreenADCData[0-59]	#	sample HGB data
IDXHGBBlueADCData[0-59]	#	sample HGB data
IDXCounter[001-071]	#	event count for each FIFO
IDXTimer[001-071]	#	FIFO time for each FIFO
IDXEventCount	#	summation of counts per FIFO
IDXChannel1	FSL Peak	channel name
IDXChannel2	FSH Peak	channel name
IDXChannel3	EXT Peak	channel name
IDXChannel4	EXT Int	channel name
IDXChannel5	RAS Peak	channel name
IDXChannel6	RAS Int	channel name
IDXChannel7	TOF	channel name

IDXChannel8	REF	channel name
IDXChannel9	EventTime	channel name
PCTInstrumentSerialNumber	DXBP00XXXX	
PCTPatientId	xyz	ID of current patient or lot number of current control material
PCTClinic	xyz	Clinic name
PCTPatientMode	#	PatientSample=0, WBCI=1, WBCII=2, WBCIII=3, CD4CtrL=4, CD4CtrL=5, ExtCtrl=6
PCTSampleRate	0.76	"WBCSampleRate" from Instrument DB
PCTAnalyzedSampleVolume	#	PCTSampleRate * summation of FIFO times
IDXCellTypeAnalyzed	White	
PCTReadTime	35	Theoretical analysis time in seconds
PCTFIFOTime	0.3	"Fifo Time" service parameter / 1000
PCTDuration	#	summation of FIFO times (actual analysis time) in seconds
PCTAirGapBlood	15	"AirGapWholeSample" from Instrument DB
PCTAirGapLyse1	75	"Air 1 Volume" service parameter
PCTAirGapLyse2	75	"Air 2 Volume" service parameter
PCTAirGapDilutedSample	60	"AirGapDilutedSample" parameter from Instrument DB
PCTSampleType	#	patient=1, CD4CtrlNorm=3, ExtCtrl=8
PCTReportMode	1	"Report Mode" service parameter
PCTWBCOffset	#	"WBC Offset", "CD4 Control WBC Offset", or "External Control WBC Offset" service parameter
PCTWBCCoeff	#	"WBC Coefficient", "CD4 Control WBC Coefficient", or "External Control WBC Coefficient" service parameter
PCTLYMOffset	#	"LYM Offset", "CD4 Control LYM Offset", or "External Control LYM Offset" service parameter
PCTLYMCoeff	#	"LYM Coefficient", "CD4 Control LYM Coefficient", or "External Control LYM Coefficient" service parameter
PCTCD4Offset	#	"CD4 Offset", "CD4 Control CD4 Offset", or "External Control CD4 Offset" service parameter
PCTCD4Coeff	#	"CD4 Coefficient", "CD4 Control CD4 Coefficient", or "External Control CD4 Coefficient" service parameter

PCTXCenterMax	#	"X Center Max","CD4 Control X Center Max", or "External Control X Center Max" service parameter
PCTXCenterMin	#	"X Center Min", "CD4 Control X Center Min", or "External Control X Center Min" service parameter
PCTYCenterMax	#	"Y Center Max", "CD4 Control Y Center Max", or "External Control Y Center Max" service parameter
PCTYCenterMin	#	"Y Center Min", "CD4 Control Y Center Min", or "External Control Y Center Min" service parameter
PCTLymphXDefault	#	"Lymph X Default", "CD4 Control Lymph X Default", or "External Control Lymph X Default" service parameter
PCTLymphYDefault	#	"Lymph Y Default", "CD4 Control Lymph Y Default", or "External Control Lymph Y Default"
PCTDefaultHeight	#	"Default Height", "CD4 Control Default Height", or "External Control Default Height" service parameter
PCTDefaultWidth	#	"Default Width", "CD4 Control Default Width", or "External Control Default Width" service parameter
PCTFSLThresh	#	"FSL Thresh", "CD4 Control FSL Thresh", or "External Control FSL Thresh" service parameter
PCTFSHThresh	#	"FSH Thresh", "CD4 Control FSH Thresh", or "External Control FSH Thresh" service parameter
PCTCenterStability	#	"Center Stability", "CD4 Control Center Stability", or "External Control Center Stability" service parameter
PCTMaxEvents	35000	"Max Events", "CD4 Control Max Events", or "External Control Max Events" service parameter
PCTSampleVolume	#	"Sample Volume", "CD4 Control Sample Volume", or "External Control Sample Volume" service parameter
PCTSheathVolume	#	"Sheath Volume", "CD4 Control Sheath Volume", or "External Control Sheath Volume" service parameter
PCTLyseVolume	#	"Volume A" service parameter + "Volume B" service parameter + "Volume C" service parameter
PCTMaxAngle	300	"Max Angle" service parameter
PCTBarcodeLyse	#	barcode string read from lyse tube

PCTBarcodeQuench	#	barcode string read from quench tube
PCTBarcodeReagent	#	barcode string read from gold reagent tube
PCTBarcodeSample	#	barcode string read from patient sample or control tube
$PAR	9	total number of parameters (channels)
$TOT	#	total number of objects for which data are stored
$NEXTDATA	0	byte offset of additional data set within file, 0=none
$BYTEORD	1,2	order in which data bytes are written
$MODE	L	U=uncorrelated single-parameter histograms, C=one correlated multiparameter histogram, L=list mode
$DATATYPE	I	I=unsigned, binary integers, F=32-bit floating point numbers, D=64-bit floating point numbers, A=ASCII encoded
$PnB	16	number of bits for each data point for parameter n (0-9)
$PnR	16384	parameter n (0-9) range
$PnE	0,0	parameter n (0-9) method of amplification
$P1N	FSL Peak	parameter 1 name
$P2N	FSH Peak	parameter 2 name
$P3N	EXT Peak	parameter 3 name
$P4N	EXT Int	parameter 4 name
$P5N	RAS Peak	parameter 5 name
$P6N	RAS Int	parameter 6 name
$P7N	TOF	parameter 7 name
$P8N	REF	parameter 8 name
$P9N	EventTime	parameter 9 name

Appendix D: AuRICA.mdb Relationship Diagram



Appendix E: Barcode Label Formats

Barcode Format For Large Tubes

Example: 46119001

4	6	119	001
Id	Exp. Yr.	Exp. Day/Mfg. Month	Seq. #
before 2015	5=2005/2015	tubes that expire:	0-999 (repeating)
1=lyse	6=2006/2016	1-366	
2=waste	7=2007/2017		
3=quench	8=2008/2018	waste tube	
4=clean	9=2009/2019	(does not expire):	
	0=2010/2020	901=jan	
2015+	1=2011/2021	902=feb	
5=lyse	2=2012/2022	903=mar	
6=waste	3=2013/2023	904=apr	
7=quench	4=2014/2024	905=may	
8=clean		906=jun	
		907=jul	
		908=aug	
		909=sep	
		910=oct	
		911=nov	
		912=dec	

Barcode Format For Gold Tubes

Example: G6119001

G	6	119	001
Id	Exp. Yr.	Exp. Day	Seq. #
G=gold	5=2005	1-366	0-999 (repeating)
	6=2006		
	7=2007		
	8=2008		
	9=2009		
	0=2010		
	1=2011		
	2=2012		
	3=2013		
	4=2014		

Barcode Format For Patient Sample Tubes

Example: P1234567

P	1234567
Id	Seq. #

P=patient 0-9999999

Barcode Format For CD4 Control Tubes
Example: 712345001

712345	001
Lot#	Seq. #
6 digit Immunotrol Lot#	0-999

END OF DOCUMENT

EXHIBIT 4

From: Karl Gu
Sent: 12/13/2006 11:36:55 PM
To: Andrea Desrosiers
CC: jwerner@capsher.com; jwaite@pointcaretechnologies.com; debarry@pointcare.net; Andrew Kenney; Gary Young
Subject: RE: back in Boston

Hi Andrea,

Attached is the meeting minutes. If you see anything missing, please let me know and we can add to the doc.

Regards,
Karl

From: Andrea Desrosiers [mailto:adesrosiers@pointcare.net]
Sent: Wednesday, December 13, 2006 3:22 PM
To: Karl Gu
Subject: back in Boston

Hello Karl,

Thank you very much for sending Jen the Validation Plan. It will save us a great deal of typing as we create our own test procedure.

Amy had said something to Don about requesting a user interface document. Do you know what she is talking about? Please drop me an email if you need anything from us. I am currently working on our trip report, but I won't be able to complete it until Jen returns on Monday. Do you know when Jason might have the meeting minutes summarized?

Sincerely,
Andrea Desrosiers

Attachment: CD4 Software Project Status Meeting2.doc

Document Title: CD4 Customer Software Project Status Meeting

Author: Jason Werner, Karl Gu

Date: December 13, 2006

Summary:

This document describes the points discussed during the meeting between Drew Scientific and PointCare, along with the action points for each person attending.

Attendees:

Name	Inital	Title	Company
Karl Gu	KG	Software Engineer	Drew Scientific
Andrea Desrosiers	AD	Software Manager	PointCare
Jennifer Waite	JW	Software Engineer	PointCare
William Ross	WR	Validation Manager	Drew Scientific
Jason R Werner	JRW	Software Developer	Capsher Technology

Status of User Interface Software:

The user interface software is close to 50% done and PointCare team estimate to finish all required changes by end of January 2007. KG suggests PointCare considering use external resources as needed to speed the process and meet deadline.

Meeting Topics:

1. **Validation**

Points Discussed:

- It was decided that both PointCare and Drew Scientific would be responsible for writing their own validation procedures.

Action Items:

- WR is responsible for the validation document for Drew Scientific.
- AD is responsible for ensuring that the validation document is written for PointCare.
- Drew Scientific will provide PointCare with the current validation document for the EXCELL 2280 analyzer.

2. **Integration**

Points Discussed:

- JRW and KG will lead the integration user interface part of the software project. This currently consists of helping with integration issues related to the User Interface, CD4 dll, ActiveX controls, calculation utilities, and autosampler logic.

Action Items:

- JRW/KG will assist Jennifer Waite with Autosampler logic questions and ensure that the code logic is correct.
- JRW will complete and send ActiveX controls to PointCare and assist with integration of each control.

3. PointCare Issues

Points Discussed:

- Screen resolution of 800X600 looks bad on current touch screens and no solution found yet.
- PointCare needs to determine barcode format for CBC/CD4 controls and samples.
- Need to determine when the computer is operating off of UPS.

4. UI Tasks Remaining

Points Discussed:

- Major tasks written in the Aurica HT User Interface Tasks document were reviewed by AD, KG, JRW, and Jennifer Waite.
- Each task written in the Aurica HT User Interface Tasks document was later reviewed again by JRW and Jennifer Waite to estimate development time.
- Screen layout will be changed on major screens by writing layout function.
- Unused control buttons will be hidden on menu.

Action Items:

- JW will make a check list for each item remaining so that it can be checked off as it is completed.
- JW is working on having the UI tasks completed by the end of January.
- JW is responsible for modifying all screens to use the new graphics.
- JW will implement hiding of unused buttons.

5. Image Buttons

Points Discussed:

- Image buttons will contain both an image and text. The text will be on the lower portion of the button.

- Image display will be configurable so that it can be enabled and disabled to meet both PointCare and Drew Scientifics needs.
- All buttons on main screen will contain images.

Action Items:

- JW will work with Dennis Chappell to design new image buttons that are square instead of round. Only make changes for a couple of screens first and proceed after input from marketing.
- JW will integrate the new buttons into the software and make the image display configurable. This includes all normal user accessible screens.

6. **Results screens**

Points discussed:

- The software was modified to use only *one* results screen, but it was decided to use *two* results screens to remove any confusion in the logic behind the scenes.

Action Items:

- JW will reverse the software back to use two results screens instead of one to remove any confusion.

7. **Calibration Samples**

Points discussed:

- Calibration samples will be run separate from other samples.
- Calibration tube will be placed in position 1 of the carousel.
- The logic for running the calibration samples will be similar to the batch processing.

Action Items:

- JW will modify the software handle configuration a calibration sample. The user will be able to define the number of times a calibration sample is processed as specified in the original user interface change document.

8. **Autosampler Logic**

Points discussed:

- The autosampler logic was discussed and detailed by KG, JW, and JRW.
- Three different logical procedures were discussed: Preparing Work Queue, Running a Batch, and Running a Stat.

Action Items:

- JRW will create flow charts detailing the logical procedures followed for each scenario.
- KG will verify flow charts.
- Basic logic is in place and JW will implement the remaining change in software.

9. Installation

Points discussed:

- The installation procedure will need to be modified for the Aurica software. There were questions related to how this can be modified.
- The software will need to be installed from a USB removable drive.

Action Items:

- AD? will be looking into how this is currently being done and figure out how this should be modified.

10. CD4 Algorithm

Points discussed:

- The API for the CD4 dll was discussed, which consisted of three basic functions as outlined by KG: *LoadCD4Param*, *CalculateCD4*, and *ReadCD4*.
- Also discussed was the integration of the dll into the existing architecture. The CD4 dll will be available to both the CBC dll and the VB app.
- The computation time is too long. User interface may be frozen for over 20 seconds and user input could be lost.

Action Items:

- AD will be working with another person from PointCare on implementing the discussed interface for the CD4 algorithm dll. CD4 configuration parameters need to be provided to implement the dialogue screen in service software.
- AD will make the CD4 dll run faster and not freeze the user interface.
- JRW/KG will be assist with questions related to integration of the dll into the software.

EXHIBIT 5

Following email is in regards to the phone conversation we had earlier today. As discussed Andrew and I will be available for a conference call re:software first of next week when Peter is available.

Doug.
-----Original Message-----
From: Andrew Kenney [mailto:andrewk@drew-scientific.com]
Sent: Wednesday, December 13, 2006 10:58 AM
To: Doug Nickols; Frank Matuszak
Subject: PointCare & software effort

We are running into a problem with the work PC is doing on the software.

It was due in September, then Thanksgiving, now January. This is looking like the critical path right now Karl thinks they are spending more time in France than on our work and that they have been told to give C2 priority. They are expecting a June launch apparently!

I have asked Gary to complain to Don that this work is slipping badly.

You might want to complain higher up - or I will if you want.

Andrew

EXHIBIT 6

From: Jennifer Waite
Sent: 1/9/2007 10:17:23 PM
To: Karl Gu
CC: jwerner@capsher.com; Andrea Desrosiers
Subject: RE: ActiveX control

Hi Karl,

Here's my updated list. I know it looks like there's a lot left to do... but I'm pretty confident I'll have all of the coding done by the end of the month. It might not necessarily work perfectly on the instrument right away... I will need to spend time with the prototype early Feb to troubleshoot and verify the code.

-Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Tuesday, January 09, 2007 5:07 PM
To: Jennifer Waite
Subject: RE: ActiveX control

Hi Jen,

Thanks for the updated doc.

How's the UI developement? Are we confident to finish all outstanding items this month?

Regards,
Karl

-----Original Message-----
From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Tue 1/9/2007 4:57 PM
To: Karl Gu
Cc: jwerner@capsher.com
Subject: RE: ActiveX control

Karl,

Here is an updated barcode doc. We added another ID character for the patient and control tubes. CD4 patient sample barcodes will start with "PT" instead of just "P" and CD4 control barcodes will start with a "CT" instead of just "C".

-jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Monday, January 08, 2007 12:02 PM
To: Jennifer Waite
Cc: jwerner@capsher.com; Andrea Desrosiers
Subject: RE: ActiveX control

Hi Jen,

I have a problem with the proposed barcode format for patient and control. The format is too generic and there are only one letter P or C

plus some digits. We could easily have a patient barcode starting from a letter D with some digits. This could be a problem to treat the tube as control instead of patient. At minimum, we need to have two letters. However, if Pointcare do want the format with no change, we can implement it.

Regards,

Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Friday, January 05, 2007 2:18 PM
To: Karl Gu
Cc: jwerner@capsher.com; Andrea Desrosiers
Subject: RE: ActiveX control

Hi Karl,

Thanks for sending the ActiveX Controls! I hope to be able to test them out next week! Attached is a document answering your questions about barcodes and reagent colors. Andrea will be sending you the CD4 configuration parameters.

I will also be sending you my updated To Do list on Monday.

-Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Wednesday, January 03, 2007 2:41 PM
To: Jennifer Waite

Cc: jwerner@capsher.com; Andrea Desrosiers
Subject: ActiveX control

Hi Jen,

Jason finished the ActiveX controls along with documents. Please try the ActiveX control.

We are close to finish the Service software and Jason will soon finish all his assignment related with this project. If you or Andrea could give us the CD4 configuration parameters, Jason can put it in service software. Also we need to have the CD4 patient, CD4 control barcode formats, and CD4 control cap color, CD4 Reagent color. Please put this in a simple document.

Regards,

Karl

Attachment: AuRICA HT UI TODO.xls

EXHIBIT 7

From: Karl Gu
Sent: 2/7/2007 1:56:27 AM
To: Don Barry
CC:
Subject: RE: UI CD4

Hi Don,

This all depends on the CD4 dll (Andrea), UI (Jen), and decks (George). When these are finished, I can deliver a working service software with all the other required firmware in one week. After that, there are more work to do, depending the quality of the code delivered.

If I cannot get the UI and CD4 dll, it is impossible to do any further integration.

Regards,

-----Original Message-----
From: Don Barry [mailto:debarry@pointcare.net]
Sent: Tue 2/6/2007 8:35 PM
To: Karl Gu
Subject: RE: UI CD4

Hi Karl,

Assuming that the software will be finished by Friday, will there be any subsequent delays from your end with regards to software integration? I realize that the delivery of the software is already a week late from the last scheduled date. Please let me know if there have been any changes.

thanks,
Don

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Tue 2/6/2007 6:57 PM
To: Jennifer Waite
Cc: Andrea Desrosiers; Don Barry; Dorothy Branco
Subject: RE: UI CD4

Hi Jen,

I really do not want to see any key code being commented out in VB at this stage. If the CD4 dll is not ready by this Friday, please hardcode the cut algorithm but keep the API accessible from the UI. We need the CD4 dll to proceed the integration work - VB, Hematology dll, and Service software.

For the screen, I will pick the blue one.

Thank you for the update.

Regards,
Karl

-----Original Message-----
From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Tue 2/6/2007 6:10 PM
To: Karl Gu
Cc: Andrea Desrosiers; Don Barry; Dorothy Branco
Subject: RE: UI CD4

Hi Karl,

Attached is my updated to-do list. I'm planning on having all high priority tasks completed by Friday. Our CD4.dll might not be quite ready for action by then... if that is the case I will send you the UI code with those function calls commented out.

I've also attached a couple of screen shots... Which button background color do you think looks the best? Don, Andrea, & Dorothy... please let me know what you think about that as well.

Best Regards,

Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Tuesday, February 06, 2007 10:34 AM

To: Jennifer Waite
Subject: UI CD4

Hi Jen,

Could you give a update about the UI? When do you think that UI will be finished?

Regards,
Karl

	A	B	C	D	E	F
1		AuRICA HT User Interface To-Do List - Release 1				
2		Maintained By: Jennifer Waite				
3					Num Open:	22
4		Status Codes: Open, Coded, Verified, On Hold			Num Coded:	15
5		Priority Codes: 1: High, 2: Medium, 3: Low			Num Verified:	111
6					Num On Hold:	4
7					Total:	152
8		Item	Priority	Description	Status	Date Verified
9						
10				GENERAL		
11		1	1	The screen resolution for the user interface will be kept at 800x600 for Release 1.	V	30-Sep
12		2	1	There will be a single executable for the PointCare and Drew user interface for Release 1.	V	30-Sep
13		3	1	For CD4 reporting, there will be 2 FCS files created: one for the 1st pass with no gold, one for the 2nd pass with gold.	C	
14		4	1	Remove option for user to run sample in "Direct Mode" (open tube).	V	30-Sep
15		5	1	Make all buttons larger for touch screen use.	V	30-Sep
16		6	1	Use "Back" or up arrow icon instead of "Exit" on all F9 buttons except on Main Menu.	V	30-Sep
17		7	3	Change all date entry text boxes to drop down menus for localization.	O	
18		8	1	Remove Worklist and Mode fields from all screens as these are related with Direct Mode sampling.	V	30-Sep
19		9	1	Remove Type fields from all screens except the Auto Sampler screen.	V	30-Sep
20		10	1	Change screen layout on non-service screens to use new graphics scheme	V	7-Jan
21		11	1	Image buttons will contain both an image and text. The text will be on the lower portion of the button. Only high level and common buttons will have images.	C	
22		12	1	Make button image display configurable	C	
23		13	1	Unused buttons will be hidden	V	7-Jan
24		14	1	Function keys for buttons will not be supported anymore.	V	7-Jan
25		15	1	Tab key should jump through all buttons on screen	V	7-Jan
26		16	2	Need to determine when computer is operating off of UPS	H	
27		17	1	Link in new CD4.dll library to call LoadCD4Parameters() and ReadCD4Results() functions.	O	
28		18	2	Need custom pop-up message box that have larger Yes/No/Ok/Cancel buttons for use with touch screen	O	
29						
30				LOGIN SCREEN		
31		19	1	Create 3 user levels: Service, Administrator, Technician	V	30-Oct
32		20	1	Login Screen will have drop down menu for choosing a user name	V	30-Oct
33		21	1	Initial login after install will contain only one user	H	
34		22	1	"Service" user will have an unchangeable username and password	V	6-Feb
35		23	1	"Service" user can create multiple Technician and Administrator users and change their passwords.	V	6-Feb

	G
1	% of Total
2	14%
3	10%
4	73%
5	3%
6	
7	
8	Notes
9	
10	
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13	
14	
15	
16	
17	
18	
19	
20	
21	Dennis delivered first set of Images on 1/17/07, 2nd set on 2/5/07
22	need to propagate code to all forms containing button images
23	
24	
25	
26	need UPS
	Need to add In calls to LoadCD4Parameters() during batch runs.
27	Calls to ReadCD4Results() have been commented out until CD4.dll file is ready.
28	this applies to all forms with small buttons
29	
30	
31	
32	
33	Final Excell24.mdb will have only "Service" user in database when installed.
34	need Encryption utility to encrypt/decrypt passwords
35	

	A	B	C	D	E	F
36		24	1	"Administrator" user can create multiple Technician users and change their passwords.	V	6-Feb
37		25	1	All prompts for operator initials need to be removed because operator username will be used.	V	30-Oct
38		26	1	Replace reagent consumption progress bars with new ActiveX control	V	
39						
40				MAIN MENU		
41		27	1	Add 2 progress bars for monitoring Gold and CD4 Reagent fluid levels.	V	30-Sep
42		28	1	Run button brings up Auto Sampler Screen instead of Run Menu Screen.	V	30-Oct
43		29	1	Autosampler status must be queried before the Autosampler Run Screen is showed.	C	
44		30	1	Calibration button grayed if user is Technician	V	30-Oct
45						
46				STARTUP AND SHUTDOWN MENU		
47		31	1	Add 2 progress bars for monitoring Gold and CD4 Reagent fluid levels.	V	30-Sep
48		32	1	Add "Logout" button which will bring up the login screen	V	30-Oct
49		33	1	After shutdown sequence is completed, bring up the login screen.	V	30-Oct
50		34	1	"Wake Up" function runs Startup behind the scenes to put instrument in Ready state. Once user logs back in, the instrument is ready to performa a test.	C	
51		35	1	User can log out without running a shudown. The auto shutdown will start at scheduled time.	C	
52						
53				WORKLIST MENU		
54				A. Edit Worklist		
55		36	1	Remove "Add Sample" Button	V	30-Nov
56		37	1	Reorder remaining uttons: Add Sample Carousel 1, Add Sample Carousel 2, Add Sample Carousel 3, Revise Selection, Delete Selection	V	30-Nov
57		38	1	Add column for "Collection Time" in Worklist table.	V	30-Nov
58		39	1	Change Print function to account for new fields in Worklist table.	V	9-Jan
59				B. Add Carousel 1/2/3 Menu		
60		40	1	Add "Sample Collection Time" field	V	30-Nov
61		41	1	Add radio buttons for "CBC only" and "CBC with CD4", default = "CBC with CD4".	V	30-Nov
62		42	1	Remove Male/Female buttons and add Gender drop down list with values: Male, Female, Unspecified	V	30-Nov
63		43	1	Add buttons for CD4 Low Control and CD4 Normal Control	V	30-Nov
64		44	1	Reorder buttons: Find Match by Patient ID, Find Match by Name, Low Control, Normal Control, High Control, CD4 Low Control, CD4 Normal Control, Save, Exit.	V	30-Nov
65				C. Revise Selection Menu		
66		45	1	Add "Sample Collection Time" field	V	30-Nov
67		46	1	Add radio buttons for "CBC only" and "CBC with CD4", default = "CBC with CD4".	V	30-Nov
68		47	1	Remove Male/Female buttons and add Gender drop down list with values: Male, Female, Unspecified	V	30-Nov

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43	code present in frmMainMenu...needs to be uncommented
44	
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50	Needs to be verified on hardware
51	Needs to be verified on hardware
52	
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56	
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59	
60	
61	
62	Using blank instead of "Unspecified"
63	
64	
65	
66	
67	
68	Using blank instead of "Unspecified"

	A	B	C	D	E	F
69		48	1	Add buttons for CD4 Low Control and CD4 Normal Control	V	30-Nov
70		49	1	Reorder buttons: Find Match by Patient ID, Find Match by Name, Low Control, Normal Control, High Control, CD4 Low Control, CD4 Normal Control, Save, Exit.	V	30-Nov
71						
72				AUTO SAMPLER RUN MENU		
73		50	1	Apply new screen layout with button images designed by Dennis	V	30-Oct
74		51	1	Add progress bars for monitoring all reagent fluid levels	V	30-Oct
75		52	1	Keep "Type" field to differentiate between Patient and Control samples.	V	30-Oct
76		53	1	Add "Run Background" button	C	
77		54	1	Define and support reading new barcode formats for CD4 Controls and CD4 Patient Samples	O	
78		55	1	Remove "Stat Direct" and "Stat Saver" buttons.	V	30-Oct
79		56	1	By default, run is CD4	C	
80		57	3	If LIS in use, query LIS for the sample type (CD4 or CBC only).	O	
81		58	1	Incorporate new Carousel ActiveX control in screen and function calls into Auto Sampler logic	O	
82		59	1	Group date, instrument, S/N into one green box	V	3-Jan
83		60	1	Group wake up status and X/B status into one green box	V	3-Jan
84		61	1	Change Analyzer Status back to text box, not light images	V	3-Jan
85						
86				DATALOG MENU		
87		62	1	Add CD4# and CD4% parameters to Datalog Table (insert after Bas param)	V	30-Sep
88		63	1	Move Bas after Eos and Bas% after Eos% in Datalog Table	V	30-Sep
89		64	1	Unsupported params will show up as blank in the Datalog table and will be blank in the database	V	9-Jan
90		65	1	Add CD4# and CD4% parameters to data stream for Transfer function	O	
91		66	1	Add CD4# and CD4% to all printouts	V	15-Jan
92		67	1	Add CD4# and CD4% to statistic calculations	V	12-Jan
93		68	1	Add "Find Date" button to allow user to search by a date	V	12-Jan
94		69	1	Do not change Datalog table cell heights if user clicks "Change" button	V	9-Jan
95						
96				RESULTS DISPLAY		
97		70	1	Apply new screen layout with button images designed by Dennis	V	
98		71	1	Keep Datalog Results display and Auto Sampler Results display in separate VB forms	V	
99		72	1	Add "Previous" and "Next" buttons to Auto Sampler Results screen to scroll through results for current batch.	C	
100		73	1	Add CD4# and CD4% result fields..keep blank for CBC only	C	
101		74	1	Add radio buttons or drop down menu to switch 3-D plot between CBC and CD4 plot.	C	
102		75	1	Add CD4 results to printout	V	
103		76	1	If CD4 run, show 2-D CD4 plot instead of 2-D Eos plot in printout	C	
104		77	1	Add "Edit Comments" button to AutoSampler result form	C	
105		78	1	Create 2D CD4 plot	C	
106		79	1	Remove animation	V	

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74	
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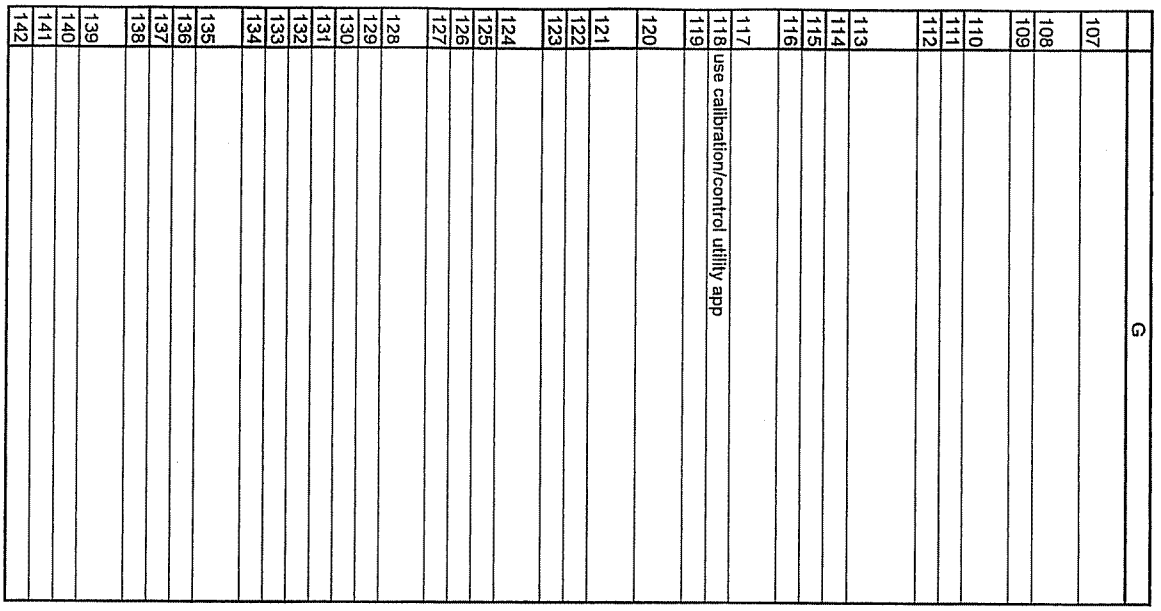
76	Needs to be run on hardware
77	barcode formats defined...need to put in code
78	
79	Works graphically, but needs testing with Auto Sampler
80	if LIS bidir enabled, sample type decided from LIS query,if no sample type returned, use default (use simulator)
81	Control in place...need to link function calls to Auto Sampler logic.
82	
83	
84	
85	
86	
87	
88	
89	
90	use simulator
91	
92	
93	
94	
95	
96	
97	This is referring to the very first design
98	
99	needs testing with Auto Sampler
100	
101	needs to be tested with CD4 hardware and algorithm
102	
103	
104	needs testing with auto sampler
105	needs testin with auto sampler and CD4.dll
106	

	A	B	C	D	E	F
107		80	1	Provide status message after Stat button press. If user presses Stat button again (within time limit), remove request	O	
108		81	1	Hide all buttons except "Back" during batch runs and replace with small Carousel ActiveX control.	O	
109		82	3	Change "Lymp" label to "Lymph"?	O	
110		83	2	The Alert/Flag list boxes need bigger scroll bars for touch screen use, or remove scroll bar and replace with just up/down buttons.	O	
111						
112				**CALIBRATION MENU**		
113		84	1	Add "Calibration History" button that will show a table like the Maintenance Log with columns: Parameter, Factor, Target, Status, Date, Time, Mode	O	
114						
115				**CALIBRATION RUN MENU**		
116		85	1	Run button brings up Auto Sampler Screen	O	
117		86	1	Change "Load Diskette" button to "Browse" so user can browse for calibration file.	O	
118		87	1	Need format of calibration file for testing.	O	
119		88	1	Remove "Load Remote" button	O	
120		89	1	Add drop down with values 3-8 to specify the number of calibration runs to complete.	O	
121		90	1	Calibration samples will be run on auto sampler using logic similar to batch processing (calibration tube put in position 1).	O	
122						
123				**CALIBRATION SUMMARY**		
124		91	1	Add Accept/Reject button to add/remove sample from calculation then automatically recalculate mean and factor values	O	
125		92	1	A minimum of 3 samples must be accepted for calculation	O	
126						
127				**QUALITY CONTROL MENU**		
128		93	1	Add buttons for CD4 Control Menu, CD4 Levy Jennings Chart, CD4 Control Data File	V	20-Jan
129				**A. CD4 Control Menu**		
130		94	1	A maximum of 24 lot #'s can be saved in the table	V	20-Jan
131		95	1	Add "Level" column to table	V	20-Jan
132		97	1	Make Select/Add/Delete/Edit buttons work for CD4 Controls	V	22-Jan
133				**i. Add CD4 Control Screen**		
134		98	1	Change "Diskette" to "Browse".	V	22-Jan
135		99	1	Modify Control Utility app to include CD4 Control so that CD4 QC range files can be made at PointCare, change DB file to 2000 format	O	
136		100	1	Remove "Remote" button	V	
137				**ii Add CD4 Control - Manual Screen**		
138		101	1	Add "Level" field for user to specify low or normal control	V	20-Jan
139		102	1	Add fields for user to enter ranges on this screen rather than ahving separate buttons to enter ranges for each level	V	21-Jan
140		103	1	Make Save/Clear/Print buttons work for CD4 Controls	V	22-Jan
141				**B. CD4 Levy-Jennings Chart**		
142		104	1	Add "Level" column to Control Selection Table	V	27-Jan


use calibration/control utility app

	A	B	C	D	E	F
143		105	1	Remove Level buttons and replace with "Select" button for Control Selection Table	V	27-Jan
144		106	1	Adjust Control Selection and Month Selection tables so that all column headings are left aligned and all fields are the same width	V	28-Jan
145		107	1	Make Levy-Jennings plot printing work with CD4	V	27-Jan
146				**C. CD4 Control Data File**		
147		108	1	Add "Level" column to Control Selection Table	V	28-Jan
148		109	1	Remove Level buttons and replace with "Select" button for Control Selection Table	V	28-Jan
149		110	1	Adjust Control Selection and Month Selection tables so that all column headings are left aligned and all fields are the same width	V	28-Jan
150		111	1	Under "Review Data", change "Write to Diskette" to "Write to File" and allow user to browse to location to save file (default to USB drive)	V	28-Jan
151		112	1	Reorder parameter columns in Control Data Files Table to match Datalog Table	V	28-Jan
152		113	1	Make Control Data printing work with CD4	V	27-Jan
153		114	1	Make Data Files printing work with CD4	V	28-Jan
154						
155				**MAINTENANCE MENU**		
156		115	1	Move "Sample Status" button to F4 position	V	23-Jan
157		116	1	Add CD4 Related Events (Reagents, Controls) to Maintenance Log	O	
158				**A. Reagents Menu**		
159		117	1	F2 should be "Prime Diluent" button	V	28-Jan
160		118	1	F3 should be "Prime Sheath" button	V	28-Jan
161		119	1	F4 should be "Prime Cleaner" button	V	28-Jan
162		120	1	F5 should be "Prime Lyse" button	V	28-Jan
163		121	1	F7 should be "Prime Prep" button	V	28-Jan
164		122	1	F8 should be "Replace Reagents" button	V	28-Jan
165				**i. Replace Reagents Menu**		
166		123	1	Add two buttons to replace Gold and CD4 Reagents	V	
167		124	1	Remove text box for operator initials	V	28-Jan
168		125	1	Support replacement of Gold Kit, Gold Vials (1 or 5 per kit), Prep Kit	V	28-Jan
169				**B. Preventive Maintenance Menu**		
170		126	3	New Functions TBD	H	
171				**C. Sample Status Screen**		
172		127	1	Add field for "CD4 OC Count" for 2nd pass total count	V	1-Feb
173		128	1	Add fields for "CD4 Start Rate" and "CD4 End Rate"	V	1-Feb
174		129	1	Modify Sample Status print function to include new CD4 fields	V	1-Feb
175						
176				**AUXILIARY MENU**		
177		130	1	Add fields for CD4 and CD4% in Patient & Action Range Screens	V	1-Feb
178		131	1	Fix window pop up when "Printer" button is pressed	V	1-Feb
179		132	1	Add "User Management" button that will bring up the User Manager Screen	V	6-Feb
180		133	1	Implement User Manager utility	V	6-Feb
181				**A. Advanced Setup**		
182		134	1	button disabled if user not "Service"	V	30-Nov
183		135	1	Change Lang button to "Choose Language" drop down menu	V	2-Feb

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153	
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155	
156	
157	did reagents
158	
159	use dummy seq. # for now
160	use dummy seq. # for now
161	use dummy seq. # for now
162	use dummy seq. # for now
163	use dummy seq. # for now
164	
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182	
183	toggles from English to local language

	A	B	C	D	E	F
184		136	1	Remove "Error Code" column from System Log table on screen	V	2-Feb
185						
186				B. Service Menu		
187		137	1	button disabled if user not "Service"	V	30-Nov
188				i. Operation Setup		
189		138	1	Remove "Operating Mode" frame	V	
190		139	1	Remove "SSD Sampler" option from Misc. frame	V	
191		140	1	"CN Free Lyse" option should be true by default	V	2-Feb
192		141	1	Change "Control Mode" fram to "CBC Control Mode"	V	2-Feb
193		142	1	Add "CD4 Control Mode" frame with same 2 fields	V	2-Feb
194		143	1	Add "Display Button Images" checkbox	V	2-Feb
195				ii. Shipping		
196		144	1	Remove prompt for initials	V	
197		145	1	Replace old prompts with new instructions for operation	H	
198				iii. Constants Setup - Impedance Constants		
199		146	1	Remove Auto Sampler Constants from screen	V	2-Feb
200		147	1	Move Serial Number to top of screen	V	2-Feb
201				Have "Create Database" button allow user to browse to a location (default:		
202		148	1	USB drive) to save file	V	2-Feb
203				iii. Constants Setup - Special Constants		
204		149	1	Add new frame called "CD4 Reagent Stability" and add fields for Gold and CD4 Reagents	V	2-Feb
205		150	1	Add new screen to change CD4 Algorithm Constants	V	5-Feb
206						
207		151	1	DATABASE FIXES Resolve Patient ID/Sample ID ambiguity when using barcodes (Worklist, Temp Worklist, Datalog tables).	C	
208		152	1	Move EOS column to be before BAS column in master DB to match Datalog table	V	30-Oct
209		153	1	Temp Control Table design should match Control Table design in master DB.	V	30-Sep

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190	remove from setup DB, only one type of sampler
191	
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197	New instructions needed?
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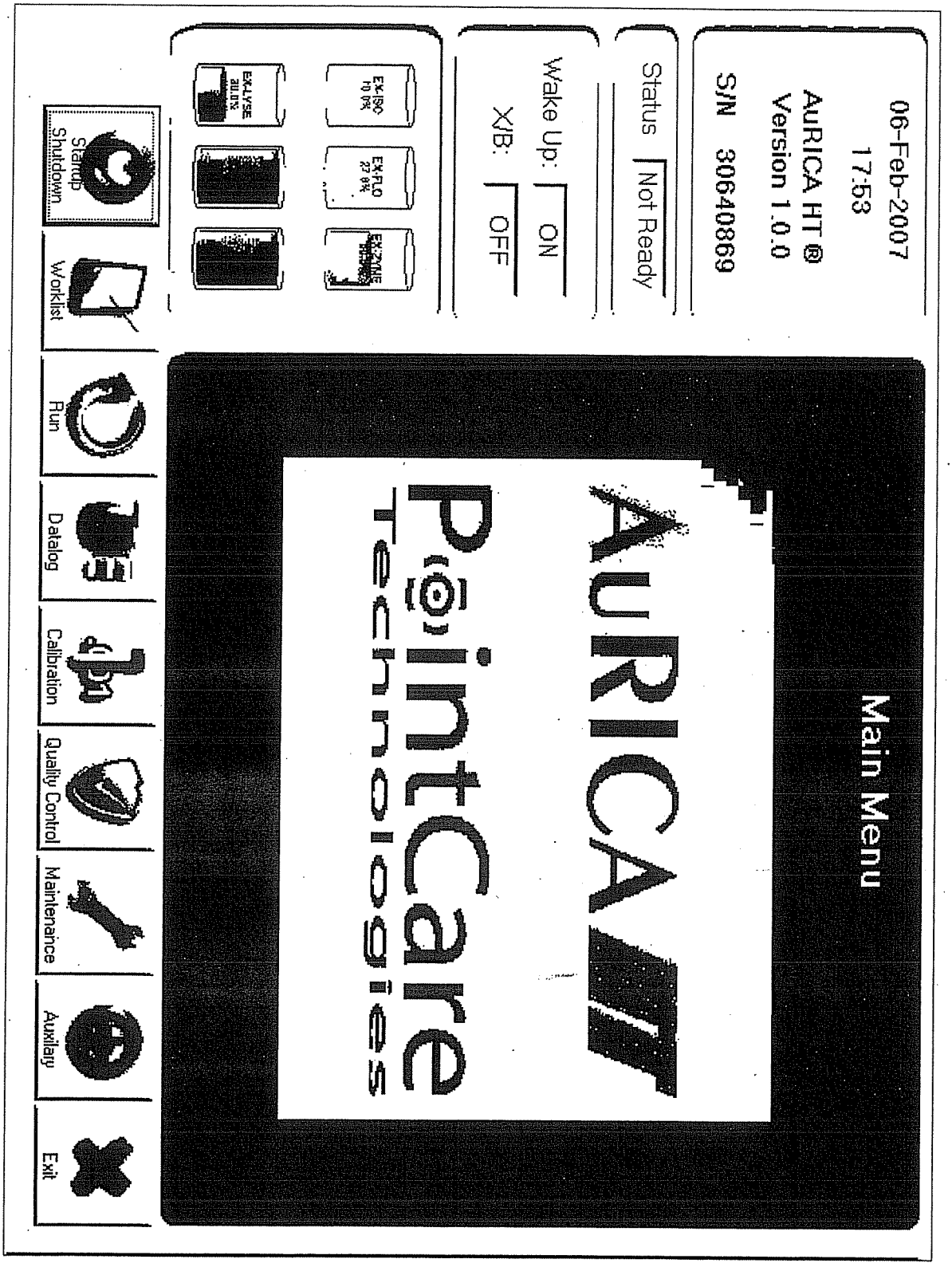
207	needs more testing on instrument
208	
209	


06-Feb-2007
17:53
AURICA HT ®
Version 1.0.0
S/N 30640869
Status
Not Ready
Wake Up:
ON
X/B:
OFF
AURICA
Main Menu
Startup
Shutdown
Worklist
Run
Datalog
Calibration
Quality Control
Maintenance
Auxilary
Exit

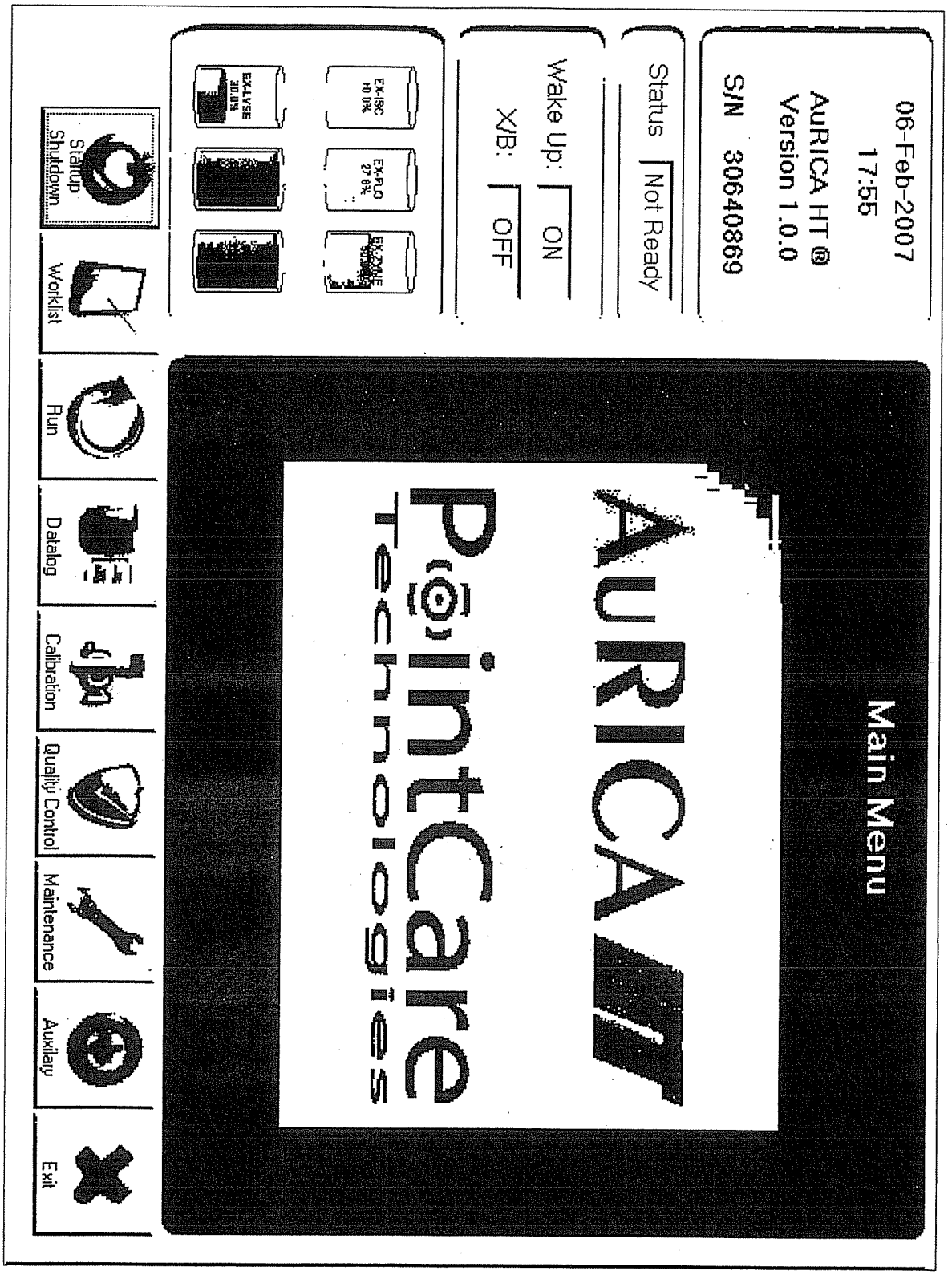

06-Feb-2007
17:55
AuRICA HT ®
Version 1.0.0
S/N 30640869
Status
Not Ready
Wake Up:
ON
X/B:
OFF
EX-ISC
EX-FLO
EXALYSE
Main Menu
AURICA
Point Care
Technologies
Startup
Shutdown
Worklist
Run
Datalog
Calibration
Quality Control
Maintenance
Auxiliary
Exit

EXHIBIT 8

From: Karl Gu
Sent: 2/20/2007 7:20:53 PM
To: Jennifer Waite
CC: Andrea Desrosiers; Dorothy Branco; Don Barry; Andrew Kenney
Subject: RE: CD4 UI and DLL code

Hi Jen,

It seems to me that I would not be able to offer much help for the problems that you are having. I have not downloaded your code yet. My schedule is full this week and I will be out of office next week. Here I will offer a little suggestions and clarify things a little bit if there is any confusion before.

First of all, when you have a problem with VB, VB is complaining something. This only tells you there is a problem. However, the real problem might be something else. What I am trying to say is that carousel ActiveX control probably is not the real problem but CD4 dll is the real problem.

You can create a separate simple VB to talk to CD4 dll. Try one function with no parameter, then add parameter passing, step by step to find what is the problem. There are plenty of book, msdn, internet example around. With the joint effort from you, Andrea, and Dorothy, I am confident that you can solve the problem.

second, if carousel activex control do have a problem, Jason will fix the problem. However, Jason has no responsibility to fix any other piece of code. I asked Capsher last week if they have resource and willing to offer help if PCT request and pay the expense. No response so far. It is very hard to find consultant that only do debugging work.

In summary, if PCT team believes that Jason or me will be responsible for fixing all problems related with code produced by PCT team, this is really an unfortunate confusion. I will offer some help if I am available. Capsher will offer help if they are paid by PCT for their work. I hope this is clear.

BTW, Items other than 1 and 2 are trivial.

Regards,
Karl

-----Original Message-----
From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Thu 2/15/2007 6:14 PM
To: Karl Gu
Cc: Andrea Desrosiers; Dorothy Branco; Don Barry
Subject: CD4 UI and DLL code

Hi Karl,

If you go to ftp://webmail.pointcare.net
and log in with username "drewsci" and password "cowboys" you will see a folder called "15-Feb-07". In there you'll find a zip file for the UI and a zip file for the DLL...as well as my updated To Do list. Dorothy did not include the code for the actual CD4 algorithm...only the framework. Here is a short summary of what is left to be done/fixed...

1. CD4 DLL and UI Integration Issues

The UI is still getting the same error message when trying to call a function from the DLL. The error description is below in the email chain. For you to test these function calls ... copy the Excell24 directory to your C drive. Then, when you start the UI, go into the Datalog and try to view results for sample number 344. Make sure to put the ExcellCD4.dll file into your C:\Windows\System32 folder.

2. Microsoft Visual Basic IDE crashes with CarouselActiveX.ocx

In the code I gave you I removed the reference to the Carousel ActiveX control from the project...as well as commented out all code referring to the control. When this control is part of the VB project... I have trouble compiling, running, or even saving the project without the IDE crashing on me. Try it!

3. Adding CD4 to LIS Communications

Do you have a sample .ORD file you can send me? I assume this file will contain information about the sample type (CBC or CD4)... correct? Do you know how that will appear in the .ORD file?

4. Control Utility App

I need to update this for CD4 Controls.

5. A couple of other small things

See spreadsheet

6. UPS Communications

I haven't had a chance to do this yet

7. Installation

I haven't had a chance to do this yet

Best Regards,

Jen

Jennifer Waite

Software Engineer

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-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Sunday, February 11, 2007 4:04 PM
To: Jennifer Waite
Cc: Andrea Desrosiers; Dorothy Branco
Subject: RE: dll header

Hi Jen,

I am extremely busy recently and may not have any time in two to three days. However, after that I will take a look if you could provide the following:
1. VB code
2. CD4 dll source without the actual algorithm, keep to yourself if you prefer.

Regards,
Karl

-----Original Message-----
From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Sat 2/10/2007 11:38 AM
To: Karl Gu
Cc: Andrea Desrosiers; Dorothy Branco
Subject: FW: dll header

Hi Karl,
Dorothy and I are having a bit of trouble integrating her DLL calls into my UI code. I have included (at the bottom of this email) both the VB code declaring and calling the DLL functions as well as Dorothy's VC++ code for exporting the functions. I'm hoping that you can give us some advice since you've done this exact thing before with Hematology.dll. When we started debugging, we were getting the following VB error (from MSDN) at the call to LoadCD4Params():

Error in Loading DLL (Error 48)

A dynamic link library (DLL) is a library specified in the Lib clause of a Declare statement. This has the following causes and solutions:

* The file isn't DLL-executable.

If the file is a source-text file, it must be compiled and linked to DLL executable form.

* The file isn't a Microsoft Windows DLL.

Obtain the Microsoft Windows DLL equivalent of the file.

* The file is an early Microsoft Windows DLL that is incompatible with Microsoft Windows protect mode.

Obtain an updated version of the DLL.

* The DLL references another DLL that isn't present.

Obtain the referenced DLL and make it available to the other DLL.

* The DLL or one of the referenced DLLs isn't in a directory specified by your path.

Move the DLL to a referenced directory or place its current directory on the path.

Dorthy and then changed her code to use the PASCAL EXPORT calls. Now... when the UI calls LoadCD4Params()... the VB IDE crashes completely without giving any intelligent error message. Also... I can't even compile the UI executable without the VB IDE crashing before the compile is complete. (This started happening intermittently ever since I linked in the Carousel ActiveX code.)

Any help or advice you can give us would be great!!
-Jen

//
//
/

VB DECLARATIONS (in DllApp.bas):

```
'removed one parameter for easier debug
Public Declare Function LoadCD4Params Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef CD4_Patient_Params As
CD4_Algorithm_Parameters) As Integer

'original declaration
'Public Declare Function LoadCD4Params Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef CD4_Patient_Params As
CD4_Algorithm_Parameters, ByVal CD4FCSFileId As String) As Integer

Public Declare Function ReadCD4Results Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef WideAngleCD4 As Byte, _
ByRef SmallAngleCD4 As Byte, _
ByRef ExtinctionCD4 As Byte, _
ByRef RightAngleCD4 As Byte, _
ByRef ClassificationCD4 As Byte, _
ByRef CalculatedResultsCD4 As
Calculated_CD4, _
ByVal CD4FCSFileId As String, _
ByVal WBCCount As Long, _
ByVal NeutCount As Long, _
ByVal LYMCount As Long, _
ByVal MonoCount As Long, _
ByVal CBCFlags As Long) As Integer
```

VB FUNCTION CALLS (in frmDatalogresult.DisplayResults())

```
Dim i As Integer
If iSampleType = 4 Or iSampleType = 5 Then
If iSampleType = 4 Then
result = LoadCD4Params(CD4_Patient_Params)
'result = LoadCD4Params(CD4_Patient_Params, strCD4FCS)
Else
result = LoadCD4Params(CD4_Control_Params)
'result = LoadCD4Params(CD4_Control_Params, strCD4FCS)
End If

result = ReadCD4Results(WideAngleCD4(0), SmallAngleCD4(0),
ExtinctionCD4(0), _
RightAngleCD4(0), ClassificationCD4(0),

_
CalculatedResultsCD4, strCD4FCS,
CalculatedResults.result(0), _
CalculatedResults.result(1),
CalculatedResults.result(2), _
CalculatedResults.result(3),
CalculatedResults.Flags)
MergeResults
End If
```

From: Dorothy Branco
Sent: Fri 2/9/2007 5:03 PM
To: Jennifer Waite
Subject: dll header

Here's the code in ExcellCD4API.h for exporting the functions from ExcellCD4.dll. The commented code was the original code convention. Then I changed the call to PASCAL EXPORT because of the note about exporting functions to non_MFC applications from a DLL dynamically linked against the MFC DLLs. I also added "AFX_MANAGE_STATE(AfxGetStaticModuleState());" before each export function body in ExcellCD4.cpp.

```
//////////////////////////////////////////////////////////////////////
//////////////////////////////////////////////////////////////////////
//////////
#ifndef _EXCELLCD4_DLL_API_
#define _EXCELLCD4_DLL_API_
#include "SysComns.h"
```

```
extern "C" int PASCAL EXPORT LoadCD4Params(CD4_Algorithm_Params
*pCD4PatientParams);

extern "C" int PASCAL EXPORT ReadCD4Results(BYTE *pWideAngle,
BYTE *pExtinction,
BYTE *pSmallAngle,
BYTE *pSuperWideAngle,
BYTE *pClassification,
sample *pCalculated,
char *FCSFileName,
long WBCCount,
long NeutCount,
long LymCount,
long MonoCount,
long CBCFlags);

//extern "C" __declspec (dllexport) int ReadCD4Results(BYTE *pWideAngle,
// BYTE *pExtinction,
// BYTE *pSmallAngle,
// BYTE *pSuperWideAngle,
// BYTE *pClassification,
// sample *pCalculated,
// char *FCSFileName,
// long WBCCount,
// long NeutCount,
// long LymCount,
// long MonoCount,
// long CBCFlags);

//extern "C" __declspec (dllexport) int
LoadCD4Params(CD4_Algorithm_Params *pCD4PatientParams,
//CString FCSFileName);
#endif
//////////////////////////////////////////////////////////////////////
//////////////////////////////////////////////////////////////////////
//////////
```

EXHIBIT 9

From: Karl Gu
Sent: 3/5/2007 4:23:07 PM
To: Jennifer Waite
CC: Andrea Desrosiers; Don Barry
Subject: RE: CD4 UI Update

Hi Jen,

Thank you for the update.

Once Capsher sort out the porblem, you may need to come to Dallas to work a few days to finish the integration. For now, I do not need the VB code.

Regards,
Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Monday, March 05, 2007 8:54 AM
To: Karl Gu
Cc: Andrea Desrosiers; Don Barry
Subject: RE: CD4 UI Update

And…here's the spreadsheet! Sorry about that.

Jennifer Waite

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-----Original Message-----
From: Jennifer Waite
Sent: Friday, March 02, 2007 6:19 PM

To: 'Karl Gu'
Cc: Andrea Desrosiers; Don Barry
Subject: CD4 UI Update

Hi Karl,

Here is an updated copy of my To-Do list. Most everything is complete....except that we are waiting on Capsher to fix the Carousel ActiveX problem and help us with the CD4 DLL. They've had our code for over a week now and haven't updated me on their progress. I will be giving Kevin Sherry a call on Monday to check on the status. We have been communicating with him directly.

The To-Do spreadsheet includes a sheet that defines changes to the Proprietary Transfer Protocol's data stream...due to the added CD4 information that I have available to me at this time. CD4 flagging has not been defined yet.

Please let me know if you want me to make the VB Source Code available to you via our FTP site.

Best Regards,

Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

	A	B	C	D	E	F
1		AuRICA HT User Interface To-Do List - Release 1				
2		Maintained By: Jennifer Waite			Num Open:	2
3					Num Coded:	21
4		Status Codes: Open, Coded, Verified, On Hold			Num Verified:	125
5		Priority Codes: 1: High, 2: Medium, 3: Low			Num On Hold:	9
6					Total:	157
7						
8		Item	Priority	Description	Status	Date Verified
9						
10				GENERAL		
11		1	1	The screen resolution for the user interface will be kept at 800x600 for Release 1.	V	30-Sep
12		2	1	There will be a single executable for the PointCare and Drew user interface for Release 1.	V	30-Sep
13		3	1	For CD4 reporting, there will be 2 FCS files created: one for the 1st pass with no gold, one for the 2nd pass with gold.	C	
14		4	1	Remove option for user to run sample in "Direct Mode" (open tube).	V	30-Sep
15		5	1	Make all buttons larger for touch screen use.	V	30-Sep
16		6	1	Use "Back" or up arrow icon instead of "Exit" on all F9 buttons except on Main Menu.	V	30-Sep
17		7	3	Change all date entry text boxes to drop down menus for localization.	V	23-Feb
18		8	1	Remove Worklist and Mode fields from all screens as these are related with Direct Mode sampling.	V	30-Sep
19		9	1	Remove Type fields from all screens except the Auto Sampler screen.	V	30-Sep
20		10	1	Change screen layout on non-service screens to use new graphics scheme	V	7-Jan
21		11	1	Image buttons will contain both an image and text. The text will be on the lower portion of the button. Only high level and common buttons will have images.	C	
22		12	1	Make button image display configurable	C	
23		13	1	Unused buttons will be hidden	V	7-Jan
24		14	1	Function keys for buttons will not be supported anymore. .	V	7-Jan
25		15	1	Tab key should jump through all buttons on screen	V	7-Jan
26		16	2	Need to determine when computer is operating off of UPS	O	
27		17	1	Link in new CD4.dll library to call LoadCD4Parameters() and ReadCD4Results() functions.	C	
28		18	2	Need custom pop-up message box that have larger Yes/No/Ok/Cancel buttons for use with touch screen	H	
29						
30				LOGIN SCREEN		
31		19	1	Create 3 user levels: Service, Administrator, Technician	V	30-Oct
32		20	1	Login Screen will have drop down menu for choosing a user name	V	30-Oct
33		21	1	Initial login after install will contain only one user	H	
34		22	1	"Service" user will have an unchangeable username and password	V	6-Feb

	G
1	% of Total
2	1%
3	13%
4	80%
5	6%
6	
7	
8	Notes, Comments, Questions
9	
10	
11	
12	
13	
14	
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16	
17	Did all but expiration date text box on frmChangeReagents. This needs to stay a text box for the hand-held barcode reader.
18	
19	
20	
21	Dennis delivered first set of images on 1/17/07, 2nd set on 2/5/07
22	
23	
24	
25	
26	UPS just arrived.
27	Getting error when calling these functions. Waiting for help from Capsher.
28	This applies to all forms with small buttons. Hold until after 1st release.
29	
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32	
33	Final Excell24.mdb will have only "Service" user in database when installed.
34	need Encryption utility to encrypt/decrypt passwords

	A	B	C	D	E	F
35		23	1	"Service" user can create multiple Technician and Administrator users and change their passwords.	V	6-Feb
36		24	1	"Administrator" user can create multiple Technician users and change their passwords.	V	6-Feb
37		25	1	All prompts for operator initials need to be removed because operator username will be used.	V	30-Oct
38		26	1	Replace reagent consumption progress bars with new ActiveX control	V	
39						
40				MAIN MENU		
41		27	1	Add 2 progress bars for monitoring Gold and CD4 Reagent fluid levels.	V	30-Sep
42		28	1	Run button brings up Auto Sampler Screen instead of Run Menu Screen.	V	30-Oct
43		29	1	Autosampler status must be queried before the Autosampler Run Screen is showed.	C	
44		30	1	Calibration button grayed if user is Technician	V	30-Oct
45						
46				STARTUP AND SHUTDOWN MENU		
47		31	1	Add 2 progress bars for monitoring Gold and CD4 Reagent fluid levels.	V	30-Sep
48		32	1	Add "Logout" button which will bring up the login screen	V	30-Oct
49		33	1	After shutdown sequence is completed, bring up the login screen.	V	30-Oct
50		34	1	"Wake Up" function runs Startup behind the scenes to put instrument in Ready state. Once user logs back in, the instrument is ready to performa a test.	C	
51		35	1	User can log out without running a shudown. The auto shutdown will start at scheduled time.	C	
52						
53				WORKLIST MENU		
54				A. Edit Worklist		
55		36	1	Remove "Add Sample" Button	V	30-Nov
56		37	1	Reorder remaining uttons: Add Sample Carousel 1, Add Sample Carousel 2, Add Sample Carousel 3, Revise Selection, Delete Selection	V	30-Nov
57		38	1	Add column for "Collection Time" in Worklist table and Temp Worklist table	V	30-Nov
58		39	1	Change Print function to account for new fields in Worklist table.	V	9-Jan
59				B. Add Carousel 1/2/3 Menu		
60		40	1	Add "Sample Collection Time" field (not mandatory field)	V	30-Nov
61		41	1	Add "CD4 Max Age" parameter to setup database and add field on Special Constants screen to edit parameter	V	7-Feb
62		42	1	When user enters collection time, check to be sure cbc sample is less than 8 hours old and cd4 sample is less than "CD4 Max Age". Ask user for confirmation before proceeding if sample too old. If told to proceed, set "CBC Sample Age" and/or "CD4 Sample Age" alerts	V	9-Feb
63		43	1	Add radio buttons for "CBC only" and "CBC with CD4", default = "CBC with CD4".	V	30-Nov
64		44	1	Remove Male/Female buttons and add Gender drop down list with values: Male, Female, Unspecified	V	30-Nov
65		45	1	Add buttons for CD4 Low Control and CD4 Normal Control	V	30-Nov

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43	needs to be verified on hardware
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50	Needs to be verified on hardware
51	Needs to be verified on hardware
52	
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62	
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64	Using blank instead of "Unspecified"
65	

	A	B	C	D	E	F
66		46	1	Reorder buttons: Find Match by Patient ID, Find Match by Name, Low Control, Normal Control, High Control, CD4 Low Control, CD4 Normal Control, Save, Exit.	V	30-Nov
67				C. Revise Selection Menu	V	30-Nov
68		45	1	Add "Sample Collection Time" field (not mandatory field)		
69		46	1	Add radio buttons for "CBC only" and "CBC with CD4", default = "CBC with CD4".	V	30-Nov
70		47	1	Remove Male/Female buttons and add Gender drop down list with values: Male, Female, Unspecified	V	30-Nov
71		48	1	Add buttons for CD4 Low Control and CD4 Normal Control	V	30-Nov
72		49	1	Reorder buttons: Find Match by Patient ID, Find Match by Name, Low Control, Normal Control, High Control, CD4 Low Control, CD4 Normal Control, Save, Exit.	V	30-Nov
73						
74				AUTO SAMPLER RUN MENU	V	30-Oct
75		50	1	Apply new screen layout with button images designed by Dennis	V	30-Oct
76		51	1	Add progress bars for monitoring all reagent fluid levels	V	30-Oct
77		52	1	Keep "Type" field to differentiate between Patient and Control samples.	C	
78		53	1	Add "Run Background" button		
79		54	1	Define and support reading new barcode formats for CD4 Controls and CD4 Patient Samples	C	
80		55	1	Remove "Stat Direct" and "Stat Saver" buttons.	V	30-Oct
81		56	1	By default, run is CD4	C	
82		57	3	If LIS bidir enabled, test type (CBC with CD4/CBC only) will be decided from LIS query. If no sample type returned, use default specified by UI.	O	
83		58	1	Incorporate new Carousel ActiveX control in screen and function calls into Auto Sampler logic	H	
84		59	1	Group date, instrument, S/N into one green box	V	3-Jan
85		60	1	Group wake up status and X/B status into one green box	V	3-Jan
86		61	1	Change Analyzer Status back to text box, not light images	V	3-Jan
87		62	1	After tubes are mapped, before starting the batch, user may click tube cap on carousel control to toggle patient sample type between CBC and CD4.	H	2-Mar
88						
89				DATALOG MENU		
90		63	1	Add CD4# and CD4% parameters to Datalog Table (insert after Bas param)	V	30-Sep
91		64	1	Move Bas after Eos and Bas% after Eos% in Datalog Table	V	30-Sep
92		65	1	Unsupported params will show up as blank in the Datalog table and will be blank in the database	V	9-Jan
93		66	1	Add CD4# and CD4% parameters to data stream for Transfer function	C	

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70	Using blank instead of "Unspecified"
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78	Needs to be run on hardware
79	Needs to be run on hardware
80	
81	Works graphically, but needs testing with Auto Sampler
82	Need example of .ORD file (created by ExcelILis.dll) with test type information included. Will Collection Time be included in order file?
83	Function calls exist and are commented out. Will uncomment when Capsher fixes bug. (IDE crashes when including Carousel ActiveX as a reference in project)
84	
85	
86	Function calls exist and are commented out. Will uncomment when Capsher fixes bug. (IDE crashes when including Carousel ActiveX as a reference in project)
87	
88	
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92	Is it necessary for VB to differentiate between CBC Control and CD4 Control in .RE (results) file? If so...how? Should Collection Time (and sample age alert?) be transferred under all 3 modes? If so...how? See sheet entitled "New Proprietary Xfer Format" for changes to Proprietary Protocol's data transmission format. Use simulator for testing.
93	

	A	B	C	D	E	F
94		67	1	Add CD4# and CD4% to all printouts	V	15-Jan
95		68	1	Add CD4# and CD4% to statistic calculations	V	12-Jan
96		69	1	Add "Find Date" button to allow user to search by a date	V	12-Jan
97		70	1	Do not change Datalog table cell heights if user clicks "Change" button	V	9-Jan
98		71	1	Add column for "Collection Time" to Datalog Table	V	7-Feb
99		72	1	If user edits collection time, check to be sure cbc sample is less than 8 hours old and cd4 sample is less than "CD4 Max Age". Ask user for confirmation before proceeding if sample too old. If told to proceed, set "CBC Sample Age" and/or "CD4 Sample Age" alerts	V	9-Feb
100						
101				RESULTS DISPLAY		
102		73	1	Apply new screen layout with button images designed by Dennis	V	
103		74	1	Keep Datalog Results display and Auto Sampler Results display in separate VB forms	V	
104		75	1	Add "Previous" and "Next" buttons to Auto Sampler Results screen to scroll through results for current batch.	C	
105		76	1	Add CD4# and CD4% result fields..keep blank for CBC only	C	
106		77	1	Add radio buttons or drop down menu to switch 3-D plot between CBC and CD4 plot.	C	
107		78	1	Add CD4 results to printout	V	
108		79	1	Include "Collection Time" and Sample Age alerts on result full printout (datalog results and asresults)	V	9-Feb
109		80	1	If CD4 run, show 2-D CD4 plot instead of 2-D Eos plot in printout	C	
110		81	1	Add "Edit Comments" button to AutoSampler result form	C	
111		82	1	Create 2D CD4 plot	C	
112		83	1	Remove animation	V	
113		84	1	Provide status message after Stat button press. If user presses Stat button again (within time limit), remove request	C	
114		85	1	Hide all buttons except "Back" during batch runs and replace with small Carousel ActiveX control.	H	
115		86	3	Change "Lymp" label to "Lymph"?	H	
116		87	2	The Alert/Flag list boxes need bigger scroll bars for touch screen use, or remove scroll bar and replace with just up/down buttons.	H	
117						
118				CALIBRATION MENU		
119		88	1	Add "Calibration History" button that will show a table like the Maintenance Log with columns: Parameter, Factor, Target, Status, Date, Time, Mode	V	11-Feb
120						
121				CALIBRATION RUN MENU		
122		89	1	Run button brings up Auto Sampler Screen	V	12-Feb
123		90	1	Change "Load Diskette" button to "Browse" so user can browse for calibration file.	V	12-Feb
124		91	1	Remove "Load Remote" button	V	12-Feb
125		92	1	Add drop down with values 3-8 to specify the number of calibration runs to complete.	V	12-Feb

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102	This is referring to the very first design
103	
104	needs testing with Auto Sampler
105	
106	needs to be tested with CD4 hardware and algorithm
107	
108	
109	
110	needs testing with auto sampler
111	needs testing with auto sampler and CD4.dll
112	
113	needs testing with hardware
	Function calls exist and are commented out. Will uncomment when Capsher fixes bug. (IDE crashes when including Carousel ActiveX as a reference in project)
114	
115	Not necessary for 1st release.
116	Not necessary for 1st release.
117	
118	
119	
120	
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122	
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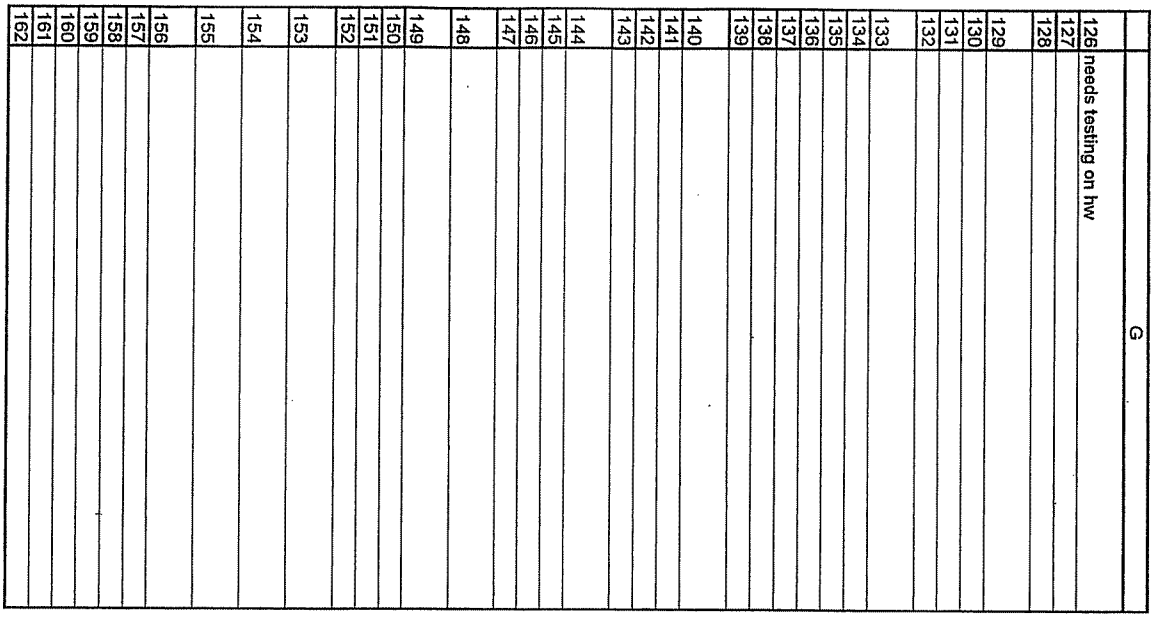
125	

	A	B	C	D	E	F
126		93	1	Calibration samples will be run on auto sampler using logic similar to batch processing (calibration tube put in position 1)	C	
127						
128				CALIBRATION SUMMARY		
129		94	1	Add Accept/Reject button to add/remove sample from calculation then automatically recalculate mean and factor values	V	13-Feb
130		95	1	A minimum of 3 samples must be accepted for calculation	V	13-Feb
131						
132				QUALITY CONTROL MENU		
133		96	1	Add buttons for CD4 Control Menu, CD4 Levy Jennings Chart, CD4 Control Data File	V	20-Jan
134				**A. CD4 Control Menu**		
135		97	1	A maximum of 24 lot #'s can be saved in the table	V	20-Jan
136		98	1	Add "Level" column to table	V	20-Jan
137		97	1	Make Select/Add/Delete/Edit buttons work for CD4 Controls	V	22-Jan
138				**i. Add CD4 Control Screen**		
139		99	1	Change "Diskette" to "Browse".	V	22-Jan
140		99	1	Modify Control Utility app to include CD4 Control so that CD4 QC range files can be made at PointCare, change DB file to 2000 format	V	27-Feb
141		100	1	Remove "Remote" button	V	
142				**ii Add CD4 Control - Manual Screen**		
143		101	1	Add "Level" field for user to specify low or normal control	V	20-Jan
144		102	1	Add fields for user to enter ranges on this screen rather than ahving separate buttons to enter ranges for each level	V	21-Jan
145		103	1	Make Save/Clear/Print buttons work for CD4 Controls	V	22-Jan
146				**B. CD4 Levy-Jennings Chart**		
147		104	1	Add "Level" column to Control Selection Table	V	27-Jan
148		105	1	Remove Level buttons and replace with "Select" button for Control Selection Table	V	27-Jan
149		106	1	Adjust Control Selection and Month Selection tables so that all column headings are left aligned and all fields are the same width	V	28-Jan
150		107	1	Make Levy-Jennings plot printing work with CD4	V	27-Jan
151				**C. CD4 Control Data File**		
152		108	1	Add "Level" column to Control Selection Table	V	28-Jan
153		109	1	Remove Level buttons and replace with "Select" button for Control Selection Table	V	28-Jan
154		110	1	Adjust Control Selection and Month Selection tables so that all column headings are left aligned and all fields are the same width	V	28-Jan
155		111	1	Under "Review Data", change "Write to Diskette" to "Write to File" and allow user to browse to location to save file (default to USB drive)	V	28-Jan
156		112	1	Reorder parameter columns in Control Data Files Table to match Datalog Table	V	28-Jan
157		113	1	Make Control Data printing work with CD4	V	27-Jan
158		114	1	Make Data Files printing work with CD4	V	28-Jan
159						
160				MAINTENANCE MENU		
161		115	1	Move "Sample Status" button to F4 position	V	23-Jan
162		116	1	Add CD4 Related Events (Reagents, Controls) to Maintenance Log	C	


126 needs testing on hw
G

	A	B	C	D	E	F
163				**A. Reagents Menu**		
164		117	1	F2 should be "Prime Diluent" button	V	28-Jan
165		118	1	F3 should be "Prime Sheath" button	V	28-Jan
166		119	1	F4 should be "Prime Cleaner" button	V	28-Jan
167		120	1	F5 should be "Prime Lyse" button	V	28-Jan
168		121	1	F7 should be "Prime Prep" button	V	28-Jan
169		122	1	F8 should be "Replace Reagents" button	V	28-Jan
170				**i. Replace Reagents Menu**		
171		123	1	Add two buttons to replace Gold and CD4 Reagents	V	
172		124	1	Remove text box for operator initials	V	28-Jan
173		125	1	Support replacement of Gold Kit, Gold Vials (1 or 5 per kit), Prep Kit	V	28-Jan
174				**B. Preventive Maintenance Menu**		
175		126	3	New Functions TBD	H	
176				**C. Sample Status Screen**		
177		127	1	Add field for "CD4 OC Count" for 2nd pass total count	V	1-Feb
178		128	1	Add fields for "CD4 Start Rate" and "CD4 End Rate"	V	1-Feb
179		129	1	Modify Sample Status print function to include new CD4 fields	V	1-Feb
180						
181				**AUXILIARY MENU**		
182		130	1	Add fields for CD4 and CD4% In Patient & Action Range Screens	V	1-Feb
183		131	1	Fix window pop up when "Printer" button is pressed	V	1-Feb
184		132	1	Add "User Management" button that will bring up the User Manager Screen	V	6-Feb
185		133	1	Implement User Manager utility	V	6-Feb
186				**A. Advanced Setup**		
187		134	1	button disabled if user not "Service"	V	30-Nov
188		135	1	Change Lang button to "Choose Language" drop down menu	V	2-Feb
189		136	1	Remove "Error Code" column from System Log table on screen	V	2-Feb
190						
191				**B. Service Menu**		
192		137	1	button disabled if user not "Service"	V	30-Nov
193				**i. Operation Setup**		
194		138	1	Remove "Operating Mode" frame	V	
195		139	1	Remove "SSD Sampler" option from Misc. frame	V	
196		140	1	"CN Free Lyse" option should be true by default	V	2-Feb
197		141	1	Change "Control Mode" fram to "CBC Control Mode"	V	2-Feb
198		142	1	Add "CD4 Control Mode" frame with same 2 fields	V	2-Feb
199		143	1	Add "Display Button Images" checkbox	V	2-Feb
200				**ii. Shipping**		
201		144	1	Remove prompt for initials	V	
202		145	1	Replace old prompts with new instructions for operation	H	
203				**iii. Constants Setup - Impedance Constants**		
204		146	1	Remove Auto Sampler Constants from screen	V	2-Feb
205		147	1	Move Serial Number to top of screen	V	2-Feb
206				Have "Create Database" button allow user to browse to a location (default:		
207		148	1	USB drive) to save file	V	2-Feb
				iii. Constants Setup - Special Constants		

	G
163	
164	use dummy seq. # for now
165	use dummy seq. # for now
166	use dummy seq. # for now
167	use dummy seq. # for now
168	use dummy seq. # for now
169	
170	
171	
172	
173	
174	
175	
176	
177	
178	
179	
180	
181	
182	
183	
184	
185	
186	
187	
188	toggles from English to local language
189	
190	
191	
192	
193	
194	
195	remove from setup DB, only one type of sampler
196	
197	
198	
199	
200	
201	
202	New instructions needed?
203	
204	
205	
206	
207	

	A	B	C	D	E	F
208		149	1	Add new frame called "CD4 Reagent Stability" and add fields for Gold and CD4 Reagents	V	2-Feb
209		150	1	Add new screen to change CD4 Algorithm Constants	V	5-Feb
210						
211				DATABASE FIXES		
212		151	1	Resolve Patient ID/Sample ID ambiguity when using barcodes (Worklist, Temp Worklist, Datalog tables).	C	
213		152	1	Move EOS column to be before BAS column in master DB to match Datalog table	V	30-Oct
214		153	1	Temp Control Table design should match Control Table design in master DB.	V	30-Sep

208	G
209	
210	
211	
212	needs more testing on instrument
213	
214	

	A	B	C	D
1	New Format for Proprietary Protocol's Data Transmission			
2	Red text indicates fields that have changed.			
3	BYTE	FORMAT A: ASCII Format B: Binary Format	DESCRIPTION	Jen's Comments
4	1	B1	STX(02h)	
5	2-7	A6	Sequence Number	
6	8-22	A15	Sample Id	
7	23-37	A15	Patient Id	
8	38-67	A30	Last Name	
9	68-82	A15	First Name	
10	83-92	A10	Birth Date	
11	93	A1	Sex (1=Male, 2=Female, 0=Unknown)	
12	94-123	A30	Doctor	
13	124	A1	1=WBC Clog	
14	125	A1	1=RBC Clog	
15	126	A1	1=WBC Flow Time	
16	127	A1	1=RBC Flow Time	
17	128	A1	1=WBC Drain	
18	129	A1	1=RBC Drain	
19	130	A1	1=Vacuum Failure	
20	131	A1	1=Hgb Sensor	
21	132	A1	1=Uncontrolled	
22	133	A1	1=Uncalibrated	
23	134-143	A10	Date(DD/MM/YYYY)	
24	144-154	A11	Time(HH:MM:SS AM/PM)	
25	155-159	A5	WBC	
26	160-164	A5	NEUT N	
27	165-169	A5	LYM N	
28	170-174	A5	MONO N	
29	175-179	A5	EOS N	
30	180-184	A5	BAS N	
31	185-189	A5	CD4 N	
32	190-194	A5	NEUT P	
33	195-199	A5	LYM P	
34	200-204	A5	MONO P	
35	205-209	A5	EOS P	
36	210-214	A5	BAS P	
37	215-219	A5	CD4 P	
38	220-224	A5	RBC	
39	225-229	A5	HGB	
40	230-234	A5	HCT	
41	235-239	A5	MCV	
42	240-244	A5	MCH	
43	245-249	A5	MCHC	
44	250-254	A5	RDW	
45	255-259	A5	PLT	
46	260-264	A5	MPV	

	A	B	C	D
47	265-269	A5	PCT	
48	270-274	A5	PDW	
49	275-299	A25	Reserved for future parameter expansion	
50	300	A1	1=Diff Flag	
51	301	A1	1=WBC Flag	
52	302	A1	1=N Flag	
53	303	A1	1=B Flag	
54	304	A1	1=L Flag	
55	305	A1	1=RBC Abn Flag	
56	306	A1	1=PLCI Flag	
57	307	A1	1=PLT/RBC Flag	
58	308-317	A10	Future Flag Expansion	CD4 Flags can go here
59	318	A1	Sample Type: 1=Patient (CBC) 2=Background 3=Calibration 4=CBC Low Control 5=CBC Normal Control 6=CBC High Control 7=CD4 Patient 8=CD4 Control Low 9=CD4 Control Normal	
60	319	A1	Sample Mode: 1=Direct 2=Cap Piercer 3=Sampler Saver 4=Auto Sampler	
61	320-325	A6	RBC Raw Count	
62	326-331	A6	RBC Tof	
63	332-337	A6	RBC Start Aperture Voltage	
64	338-343	A6	RBC End Aperture Voltage	
65	344-349	A6	PLT Raw Count	
66	350-355	A6	WBC Raw Count	
67	356-361	A6	WBC Tof	
68	362-367	A6	WBC Start Aperture Voltage	
69	368-373	A6	WBC End Aperture Voltage	
70	374-379	A6	HGB Sample	
71	380-385	A6	HGB Reference	
72	386-391	A6	WOC Count	
73	392-397	A6	WOC Start Rate	
74	398-403	A6	WOC End Rate	
75	404-409	A6	Vacuum During Sample	
76	410	A1	1=CBC Sample Age Alert	
77	411	A1	1=CD4 Sample Age Alert	
78	412-417	A6	CD4 Optical Count	
79	418-423	A6	CD4 OC Start Rate	
80	424-429	A6	CD4 OC End Rate	

	A	B	C	D
81	430-453	A24	Open for expansion	
82	454-455	A2	Reserved	
83	456	B1	EOT(04h)	

EXHIBIT 10

From: Karl Gu
Sent: 3/26/2007 10:43:19 PM
To: Andrew Kenney; Doug Nickols; Gary Young
CC:
Subject: FW: Project settings for creating a DLL in MSVS

Hi,

See the attached email from Pointcare. Capsher fixed the problem and it is down to Pointcare to supply a version of CD4 dll to go with the unit.

Regards,
Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Monday, March 26, 2007 4:33 PM
To: Kevin Sherry
Cc: Dorothy Branco; Andrea Desrosiers; Karl Gu
Subject: RE: Project settings for creating a DLL in MSVS

Kevin,

Changing those settings seemed to fix our initial problem when calling the DLL. We have more work to do to fix the meat of the DLL functions…but we now on our way! I also have experience no crashes since you sent the new Carousel .ocx file. Thanks again!

-Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

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fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Kevin Sherry [mailto:sherry@capsher.com]
Sent: Friday, March 23, 2007 4:23 PM
To: Jennifer Waite
Subject: Project settings for creating a DLL in MSVS

Hi Jennifer,

Upon further inspection of the project you sent me, it looks like the Release mode settings were configured to build an EXE file, while the Debug settings were configured to build a DLL file.

I think you want both Release and Debug modes to create the same type of file (DLL), so here are instructions for setting up both modes.

To create a DLL in Release mode:

---

1. Go to Project\Settings dialog

2. Select "Win32 Release" from the "Settings For:" drop-down list

3. Click on the "Link" property page

4. Copy the following line of settings

/nologo /subsystem:windows /dll /incremental:no /pdb:"Release/ExcellCD4.pdb" /machine:I386 /def:".\ExcellCD4.def" /out:"Release/ExcellCD4.dll" /implib:"Release/ExcellCD4.lib"

5. Paste into the multi-line edit called "Project Options:" at the bottom of the "Link" property page. Make sure you overwrite completely whatever was in the edit before.

6. Hit OK

To create a DLL in Debug mode:

---

1. Go to Project\Settings dialog

2. Select "Win32 Debug" from the "Settings For:" drop-down list

3. Click on the "Link" property page

4. Copy the following line of settings

/nologo /subsystem:windows /dll /incremental:yes /pdb:"Debug/ExcellCD4.pdb" /debug /machine:I386 /def:".\ExcellCD4.def" /out:"Debug/ExcellCD4.dll" /implib:"Debug/ExcellCD4.lib" /pdbtype:sept

5. Paste into the multi-line edit called "Project Options:" at the bottom of the "Link" property page. Make sure you overwrite completely whatever was in the edit before.

6. Hit OK

Let me know if this helps.

Best Regards,

Kevin

Kevin Sherry

mailto:sherry@capsher.com

CAPSHER TECHNOLOGY, INC.

2402 BROADMOOR DR STE A204

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Fax: (979) 776-3805

EXHIBIT 11

From: Jennifer Waite
Sent: 5/8/2007 3:16:54 PM
To: Karl Gu
CC: Dorothy Branco; Andrea Desrosiers
Subject: RE: CD4 dll and doc

Hi Karl,

Dorothy won't be available to work on the DLL until a bit later this week…Thursday or Friday. We should have it ready for you by early next week. I will update the document and send it to you by Friday.

-Jen

Jennifer Waite

Software Engineer

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tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Tuesday, May 08, 2007 10:52 AM
To: Jennifer Waite
Subject: CD4 dll and doc

Hi Jen,

Could you make sure to send me the updated CD4 dll and doc by this Friday? I have a plan to get CD4 Service software finished by then.

Thanks,
Karl

EXHIBIT 12

From: Jennifer Waite
Sent: 5/11/2007 8:52:56 PM
To: Karl Gu
CC:
Subject: RE: LIS dll updated

Hi Karl,

Attached is the updated CD4 DLL document. Dorothy is working on the implementation concurrently with a higher priority project. We hope to have it ready for you by the end of next week.

I tried my best to test the LIS DLL you sent me on Monday. I finally got the cable I needed. I tried this test on 2 different computers and got the same outcome. The UI is telling me the port is initializing properly, but the computer running the simulator is not getting any data…even when I tried to transfer a CBC patient result (which was working in TX!). The UI seems to be creating correct .RES files (see below) but the DLL doesn't seem to be picking them up from the C:\Excell24\Lis\Results directory. I get the following error message right before the VB LisCheckError() function clears out the folder. "Error communicating with LIS. Please check transfer settings and connection."

Everything is leading me to believe it's a problem with the DLL. Have you tried transferring a CBC patient result from the computer attached to the instrument I was working on… using this same DLL?

Here are 2 .RES files created by the UI…one for CBC control, one for CD4 control.

[2] [Demographics]

LOT_NUMBER=XP057

LOT_EXPIRE=20070702

CONTROL_LEVEL=High

TEST_TIME=20070430121840

[Results]

Test=WBC;20.9;16.5;21.5;K/µL;

Test=Neut;16.2;10.9;13.9;K/µL;

Test=Lymp;3.4;3.1;6.5;K/µL;

Test=Mono;0.9;0.5;2.3;K/µL;

Test=Eos;0.3;0.0;0.8;K/µL;

Test=Bas;0.1;0.0;0.4;K/µL;

Test=Neut%;77.3;57.2;73.2;%;

Test=Lymp%;16.2;15.1;33.1;%;

Test=Mono%;4.4;2.6;12.6;%;

Test=Eos%;1.4;0.0;4.2;%;

Test=Bas%;0.7;0.0;2.0;%;

Test=RBC;3.74;5.42;6.02;M/µL;

Test=Hgb;19.0;18.2;19.8;g/dL;

Test=Hct;37.0;51.0;58.0;%;

Test=MCV;98.8;90.2;100.2;fL;

Test=MCH;50.9;31.7;34.7;pg;

Test=MCHC;51.5;32.6;37.2;g/dL;

Test=RDW;12.6;12.7;16.7;%;

Test=Plt;496;540;700;K/µL;

Test=MPV;8.8;7.1;10.1;fL;

Alert=000100000100000

Flag=0000000000000

[4] [Demographics]

LOT_NUMBER=CT1083055

LOT_EXPIRE=20081031

CONTROL_LEVEL=Normal

TEST_TIME=20070430152305

[Results]

Test=WBC;20.8;16.5;21.5;K/µL;

Test=Lymp;3.4;3.1;6.5;K/µL;

Test=CD4;7;450;3000;/µL;

Test=Lymp%;16.4;15.1;33.1;%;

Test=CD4%;0.2;0.0;40.0;%;

Alert=000100000100000

Flag=0000000000000

Have a great weekend!

Jen

Jennifer Waite

Software Engineer

PointCare Technologies, Inc.

tel: (508) 281-6926 x15

fax: (508) 281-6930

jwaite@pointcare.net

-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Monday, May 07, 2007 11:08 AM
To: Jennifer Waite
Subject: LIS dll updated

Hi Jen,

Please check if the attached dll works for CD4 control. It expecting the CD4 control type as [4] and have the same type of header as CBC control with CD4 and CD4% results in the transfer file.

Regards,

Karl

Attachment: CD4 DLL Integration v4.doc

AuRICA HT ExcellCD4.dll Integration v4
Jennifer Waite 5/11/2007

1. Loading CD4 Algorithm Parameters: `LoadCD4Parameters()`

At UI startup, the CD4 algorithm parameters shall be read by the VB from a table called "CD4 Parameters" in the Excell24.mdb database and put in a variable of type "CD4_Algorithm_Params" which shall defined as follows:

```
Type CD4_Algorithm_Params
      Coefficient as Single                'default = 1
      Offset as Integer                    'default = 0
      X_Center_Max as Integer              'default = 130
      X_Center_Min as Integer              'default = 57
      Y_Center_Max as Integer              'default = 113
      Y_Center_Min as Integer              'default = 15
      Lymph_X_Default as Integer           'default = 94
      Lymph_Y_Default as Integer           'default = 64
      Default_Height as Integer            'default = 25
      Default_Width as Integer             'default = 25
      Height_Change as Integer             'default = 4
      Width_Change as Integer              'default = 4
      CD4_X_Max As Integer                 'default = 62
      CD4_X_Min As Integer                 'default = 52
      dummy As Integer
End Type
```

The VB UI shall provide an interface for Service Technicians to set the CD4 algorithm parameters for both patient samples and CD4 control samples and save it to the database.

After the CD4 sequence is complete, a local instance of the CD4_Algorithm_Parameters structure shall be passed to ExcellCD4.dll, along with the FCS file name, through the LoadCD4Parameters() function call. The return value shall be an Integer indicating success (1), failure (0), or .fcs file error (2).

VB Function Declaration:

```
Public Declare Function LoadCD4Params Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef CD4_Patient_Params As
CD4_Algorithm_Parameters, ByVal CD4FCSFileId As String, ByVal
SampleType As Integer) As Integer
```

VB Function Call:

```
'CD4 Patient
Status = LoadCD4Parameters(CD4_Patient_Params, strFCSFileCD4, 0)
OR
'CD4 Low Control
Status = LoadCD4Parameters(CD4_Control_Params, strFCSFileCD4, 1)
OR
'CD4 Normal Control
Status = LoadCD4Parameters(CD4_Control_Params, strFCSFileCD4, 2)
```

C++ Function Declaration:

```
int LoadCD4Params(CD4_Algorithm_Params *pCD4PatientParams, char *
FCSFileName, short SampleType);
```

C++ Struct Definition:

```
struct CD4_Algorithm_Params
{
      float Coefficient;
      short Offset;
      short X_Center_Max;
      short X_Center_Min;
      short Y_Center_Max;
      short Y_Center_Min;
      short Lymph_X_Default;
      short Lymph_Y_Default;
      short Default_Height;
      short Default_Width;
      short Height_Change;
      short Width_Change;
      short CD4_X_Max;
      short CD4_X_Min;
      short dummy;
};
```

LoadCD4Parameters() will pack the header of the CD4 .fcs file with the CD4 algorithm parameter names and values.

2. Function to read CD4 cell data and calculate results: `ReadCD4Results()`

This function shall be defined in ExcellCD4.dll and called by the Service Software during the sequence after the CD4 .fcs file is made, or by the VB UI right before displaying new results. The return value shall be an Integer indicating success (1), failure (0), or .fcs file error (2). LoadCD4Parameters() must be called prior to calling this function. After completing the calculation on the CD4 data, the ReadCD4Results() function will store the populated Classification array and Sample structure back into the .FCS file for later results retrieval.

VB Function Declaration:

```
Public Declare Function ReadCD4Results Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef WideAngleCD4 As Byte, _
            ByRef ExtinctionCD4 As Byte, _
            ByRef SmallAngleCD4 As Byte, _
            ByRef SuperWideAngleCD4 As Byte, _
            ByRef ClassificationCD4 As Byte, _
            ByRef CalculatedResultsCD4 As Calculated_CD4, _
            ByVal CD4FCSFileId As String, _
            ByVal WBCCount As Single, _
```

```
                ByVal NeutCount As Single, _
                ByVal LYMCount As Single, _
                ByVal MonoCount As Single, _
                ByVal CBCFlags As Long) As Integer
```

VB Function Call:

```
Status = ReadCD4Results(WideAngleCD4(0), ExtinctionCD4(0),
SmallAngleCD4(0), SuperWideAngleCD4(0), ClassificationCD4(0),
CalculatedResultsCD4, strCD4FCS, CalculatedResults.result(0),
CalculatedResults.result(1), CalculatedResults.result(2),
CalculatedResults.result(3), CalculatedResults.Flags)
```

VB Definitions and Declarations of Parameters Passed to ReadCD4Results():

```
Type Calculated_CD4
    CD4Result As Single
    CD4PercentResult As Single
    CD4Flags As Long
    total_cell_count As Single
    initial_cell_rate As Single
    final_cell_rate As Single
End Type

Public CalculatedResultsCD4 As Calculated_CD4
```

The initial_cell_rate and final_cell_rate are calculated using timing data for each event during the first 3 and last 3 seconds of the 15 second acquisition time.

```
Public ClassificationCD4(49999) As Byte
```

Each element in the Classification array represents each cell in total_cell_count. A value of 0 in the array represents a non-lymph, 2 is CD4-, 6 is CD4+

```
Public WideAngleCD4(49999) As Byte
Public SmallAngleCD4(49999) As Byte
Public ExtinctionCD4(49999) As Byte
Public SuperWideAngleCD4(49999) As Byte
```

These arrays contain event data binned to 256.

The rest of the parameters passed into the ReadCD4Results() function are values calculated by the CBC algorithm and passed in by value. The CBC algorithm must be run prior to the ReadCD4Results() call.

C++ Function Declaration:

```
int ReadCD4Results(BYTE *pWideAngle,
                           BYTE *pExtinction,
                           BYTE *pSmallAngle,
                           BYTE *pSuperWideAngle,
                           BYTE *pClassification,
```

```
                                Sample * pCalculated,
                                char * FCSFileName,
                                float WBCCount,
                                float NeutCount,
                                float LymCount,
                                float MonoCount,
                                long CBCFlags);
```

C++ Struct Definition:

```
struct Sample
{
      float CD4Result;
      float CD4PercentResult;
      long Flags;
      float total_cell_count;
      float initial_cell_rate;
      float final_cell_rate;
};
```

3. Function to retrieve previously calculated CD4 results: `RecoverCD4Results()`

This function shall be defined in ExcellCD4.dll and called by the VB UI when displaying previously calculated results. The return value shall be an Integer indicating success (1), failure (0), or .fcs file error (2). LoadCD4Parameters() should NOT be called prior to calling this function. The RecoverCD4Results() function shall read the Classification array and Sample structure that were previously saved in the .FCS file.

All parameters to this function are described in the previous section.

VB Function Declaration:

```
Public Declare Function RecoverCD4Results Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef WideAngleCD4 As Byte, _
            ByRef ExtinctionCD4 As Byte, _
            ByRef SmallAngleCD4 As Byte, _
            ByRef SuperWideAngleCD4 As Byte, _
            ByRef ClassificationCD4 As Byte, _
            ByRef CalculatedResultsCD4 As Calculated_CD4, _
            ByVal CD4FCSFileId As String) As Integer
```

VB Function Call:

```
Status = RecoverCD4Results(WideAngleCD4(0), ExtinctionCD4(0),
SmallAngleCD4(0), SuperWideAngleCD4(0), ClassificationCD4(0),
CalculatedResultsCD4, strCD4FCS)
```

C++ Function Declaration:

```
int RecoverCD4Results(BYTE *pWideAngle,
                      BYTE *pExtinction,
                      BYTE *pSmallAngle,
                      BYTE *pSuperWideAngle,
                      BYTE *pClassification,
                      Sample * pCalculated,
                      char * FCSFileName);
```

EXHIBIT 13

Peter, can you clear up the concern Karl has regarding the software he's been waiting on for such a long time now. He's getting frustrated. still waiting, putting in long hours on all the work we've loaded him down with.

Thanks,

Doug.

From: Karl Gu
Sent: Friday, May 18, 2007 1:35 PM
To: Andrew Kenney; Doug Nickols; Gary Young
Subject: FW: LIS dll updated

Hello,

After all the help I gave to Pointcare, I was expecting in a couple of weeks to have a CD4 software ready for validation. Originally I thought that Pointcare is late for another one week for the part I am requesting. It seems to me that I did not really understand what's going on in their side. They are working on a higher priority project as they said in the mail.

Regards,
Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Friday, May 11, 2007 3:53 PM
To: Karl Gu
Subject: RE: LIS dll updated

Hi Karl,

Attached is the updated CD4 DLL document. Dorothy is working on the implementation concurrently with a higher priority project. We hope to have it ready for you by the end of next week.

EXHIBIT 14

From: William Ross
Sent: Wednesday, May 30, 2007 8:46 AM
To: Doug Nickols; Gary Young; George Chappell
Subject: FW: HT Software
Importance: High

Let me know when the smoke clears on this.....

From: Peter Hansen [mailto:phansen@pointcaretechnologies.com]
Sent: Tuesday, May 29, 2007 6:01 PM
To: Gary Young; William Ross; Karl Gu; Doug Nickols
Cc: Don Barry; Andrea Desrosiers; Jennifer Waite; Dorothy Branco
Subject: HT Software
Importance: High

Hello All,

We have hit a snag in the HT project schedule. Here is the situation.

As you know we are behind schedule on the HT because the CD4 subsystem still has hardware problems. Amy has made a lot of progress in finding the problems and solving them. In the end we will be OK, but what has happened from a schedule perspective is not OK.

The HT was scheduled to be ahead of our AuRICA NOW C2/PCT project at all times, but in fact the HT has slipped to the point where the NOW is significantly ahead of the HT. Consequently, whatever is happening on the HT these days is happening at the very point where we are very busy with the NOW. If all had gone to plan on the HT, we would have had no conflict for resources.

The main conflict for resources is in software. I will have to stop HT software work at PCT for approximately 2 1/2 weeks from today in order to meet long standing, scheduled obligations for our software group on the NOW. I will work with the group to find a way to minimize the

overall HT schedule impact.

In the meantime please understand that the critical path for this project still lies through solving the hardware problems in the CD4 subsystem, and not through software. No system validation is possible until those problems are solved. When we met last at Drew I believe that was well understood by Gary and George and they have been responsive to the needs of the project.

I will ask Don Barry to send Gary the most recent schedule revision in our PCT Development Plan for discussion. It is still valid and acceptable to us despite any hold ups in software.

If there are any questions in this matter please contact me directly. My mobile is 518 253 8643. I am frequently out and about and away from my desk phone.

By the way I don□mean to annoy anyone by asking for a □read□confirmation, but you all have such a wide variety of emailboxes ranging from Escalon, to MWI Danam, to Drew, to ATT that I am never sure that I hit them right.

Thank you,

Peter

EXHIBIT 15

From: Jennifer Waite
Sent: 6/2/2007 10:04:51 PM
To: Jennifer Waite; Williamross7@tx.rr.com; Karl Gu
CC: Andrea Desrosiers
Subject: RE: CD4 UI

William and Karl,
Please read the email below. It was returned to me by our server because my attachment size was too big. I have placed the 2 .zip files onto our FTP site so that you can download them. Our ftp site is ftp://webmail.pointcare.net. You can log in with user name "drewsci" and password "cowboys". The files are in the "CD4 UI 1-Jun-07" directory.

Have a great weekend!
Jen

From: Jennifer Waite
Sent: Fri 6/1/2007 7:35 PM
To: 'Williamross7@tx.rr.com'; 'Karl Gu'
Cc: Andrea Desrosiers
Subject: CD4 UI

Hi William and Karl,

I have attached a zip file containing the necessary files for installing the UI, which you can use to start testing. Just launch the install.bat file. Most (see list below) Hematology and CD4 functions should work, but you will not get meaningful CD4 data, as we discussed yesterday with Peter on the phone. Please be aware that due to the current state of the CD4 dll, anytime you view CD4 results you will have about a 3 to 7 second delay before the results are actually shown.

When you install the UI, a populated Excell24.mdb database and many sample data files will be installed so you can immediately start testing many functions without having to run samples. If you would like default (empty) databases, you will find them in the C:\Excell24\Databases directory called Excell24_Template.mdb and XL24Setup_XL24_Template.mdb. You just have to rename them before use. There are no user passwords set up in the populated Excell24.mdb database. If you use the empty database, the Service user password is "service".

The second zip file I attached to this email contains the updated Control Utility program and

accompanying source code and database.

Here is a list of UI tasks that still need to be completed:

1. STAT function needs more debugging. It doesn't work correctly at this time.

2. UPS support

3. Waiting for a few more button icon images from Dennis Chappell

4. Modify a few function calls when Dorothy updates ExcellCD4.dll.

5. Add support for CD4 flags (this won't happen until we can get meaningful CD4 data).

6. Need to fix the CD4 Control barcode label. The barcode is too small on the current label to be automatically read by the Auto Sampler.

7. Drew needs to supply new Main Screen logo image (Designed by Dennis?)

8. Need to add option on Operation Setup screen for 24-Hour time display throughout the UI. This was requested by Peter.

9. Language translation, testing, and accompanying screen adjustments.

10. Update Peer Review Utility (Karl mentioned this to me briefly while I was in TX. I do not have the code).

As far as documentation is concerned, I owe you guys an updated SRS (requirements document), as well as an updated Validation document with the CD4 functions added in.

I do not know at this time when these tasks will be complete because for the next 2 weeks I will be working on our AuRICA NOW software validation which includes me going to France for a week. I will, of course, be reachable at any time through email.

Please don't hesitate to contact me with any questions.

Best Regards,

Jen

Jennifer Waite

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jwaite@pointcare.net

EXHIBIT 16

From: Karl Gu
Sent: 6/8/2007 3:49:09 PM
To: Gary Young; Doug Nickols
CC:
Subject: FW: CD4 Update

Pointcare delivered the software and we will start tesing ASAP.

Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Friday, June 08, 2007 10:20 AM
To: Karl Gu; Williamross7@tx.rr.com
Cc: Andrea Desrosiers; Dorothy Branco
Subject: CD4 Update

Hi Karl and William,

The attached zip file contains a new CD4 DLL file, a new UI executable file, and the CD4 DLL integration document. Dorothy has completed the DLL changes that we discussed in TX and is described in the document. The UI executable has changed to support the new RecoverCD4Results() function call.

Karl, I finally figured out why I was having LIS communication problems a couple of weeks ago. The reason is that I didn't know I needed a "null modem" cable. I finally found one and tested your DLL. I tested transferring a CD4 control result file and everything is working correctly as far as I can tell.

Also, Karl, could you make a small change to Hematology24.dll for us? We noticed that when you are creating the CD4 .fcs file, you are writing junk (left over) data into the part of the file that holds classification data. Could you make it a point to pack zeros into this part of the file? The reason is that we don't want to have false classification values in the file at any time… in case the software crashes or is terminated for some unknown reason before the CD4 dll has a chance to touch the file and reset that data. Let me know if you need clarification.

Thanks…and have a great weekend!

-Jen

Jennifer Waite

Software Engineer

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fax: (508) 281-6930

jwaite@pointcare.net

Attachment: CD4 DLL & DLL Update 8Jun07.zip

AuRICA HT ExcellCD4.dll Integration v5
Jennifer Waite 6/7/2007

1. Loading CD4 Algorithm Parameters: `LoadCD4Parameters()`

At UI startup, the CD4 algorithm parameters shall be read by the VB from a table called "CD4 Parameters" in the Excell24.mdb database and put in a variable of type "CD4_Algorithm_Params" which shall defined as follows:

```
Type CD4_Algorithm_Params
      Coefficient as Single                'default = 1
      Offset as Integer                    'default = 0
      X_Center_Max as Integer              'default = 130
      X_Center_Min as Integer              'default = 57
      Y_Center_Max as Integer              'default = 113
      Y_Center_Min as Integer              'default = 15
      Lymph_X_Default as Integer           'default = 94
      Lymph_Y_Default as Integer           'default = 64
      Default_Height as Integer            'default = 25
      Default_Width as Integer             'default = 25
      Height_Change as Integer             'default = 4
      Width_Change as Integer              'default = 4
      CD4_X_Max As Integer                 'default = 62
      CD4_X_Min As Integer                 'default = 52
      dummy As Integer
End Type
```

The VB UI shall provide an interface for Service Technicians to set the CD4 algorithm parameters for both patient samples and CD4 control samples and save it to the database.

After the CD4 sequence is complete, a local instance of the CD4_Algorithm_Parameters structure shall be passed to ExcellCD4.dll, along with the FCS file name, through the LoadCD4Parameters() function call. The return value shall be an Integer indicating success (0), failure (1), or .fcs file error (2).

VB Function Declaration:

```
Public Declare Function LoadCD4Params Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef CD4_Patient_Params As
CD4_Algorithm_Parameters, ByVal CD4FCSFileId As String, ByVal
SampleType As Integer) As Integer
```

VB Function Call:

```
'CD4 Patient
Status = LoadCD4Parameters(CD4_Patient_Params, strFCSFileCD4, 0)
OR
'CD4 Low Control
Status = LoadCD4Parameters(CD4_Control_Params, strFCSFileCD4, 1)
OR
'CD4 Normal Control
Status = LoadCD4Parameters(CD4_Control_Params, strFCSFileCD4, 2)
```

C++ Function Declaration:

```
int LoadCD4Params(CD4_Algorithm_Params *pCD4PatientParams, char *
FCSFileName, short SampleType);
```

C++ Struct Definition:

```
struct CD4_Algorithm_Params
{
      float Coefficient;
      short Offset;
      short X_Center_Max;
      short X_Center_Min;
      short Y_Center_Max;
      short Y_Center_Min;
      short Lymph_X_Default;
      short Lymph_Y_Default;
      short Default_Height;
      short Default_Width;
      short Height_Change;
      short Width_Change;
      short CD4_X_Max;
      short CD4_X_Min;
      short dummy;
};
```

LoadCD4Parameters() will pack the header of the CD4 .fcs file with the CD4 algorithm parameter names and values.

2. Function to read CD4 cell data and calculate results: `ReadCD4Results()`

This function shall be defined in ExcellCD4.dll and called by the Service Software during the sequence after the CD4 .fcs file is made, or by the VB UI right before displaying new results. The return value shall be an Integer indicating success (0), failure (1), or .fcs file error (2). LoadCD4Parameters() must be called prior to calling this function. After completing the calculation on the CD4 data, the ReadCD4Results() function will store the populated Classification array and Sample structure back into the .FCS file for later results retrieval.

VB Function Declaration:

```
Public Declare Function ReadCD4Results Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef WideAngleCD4 As Byte, _
            ByRef ExtinctionCD4 As Byte, _
            ByRef SmallAngleCD4 As Byte, _
            ByRef SuperWideAngleCD4 As Byte, _
            ByRef ClassificationCD4 As Byte, _
            ByRef CalculatedResultsCD4 As Calculated_CD4, _
            ByVal CD4FCSFileId As String, _
            ByVal WBCCount As Single, _
```

```
                ByVal NeutCount As Single, _
                ByVal LYMCount As Single, _
                ByVal MonoCount As Single, _
                ByVal CBCFlags As Long) As Integer
```

VB Function Call:

```
Status = ReadCD4Results(WideAngleCD4(0), ExtinctionCD4(0),
SmallAngleCD4(0), SuperWideAngleCD4(0), ClassificationCD4(0),
CalculatedResultsCD4, strCD4FCS, CalculatedResults.result(0),
CalculatedResults.result(1), CalculatedResults.result(2),
CalculatedResults.result(3), CalculatedResults.Flags)
```

VB Definitions and Declarations of Parameters Passed to ReadCD4Results():

```
Type Calculated_CD4
    CD4Result As Single
    CD4PercentResult As Single
    CD4Flags As Long
    total_cell_count As Single
    initial_cell_rate As Single
    final_cell_rate As Single
End Type

Public CalculatedResultsCD4 As Calculated_CD4
```

The initial_cell_rate and final_cell_rate are calculated using timing data for each event during the first 3 and last 3 seconds of the 15 second acquisition time.

```
Public ClassificationCD4(49999) As Byte
```

Each element in the Classification array represents each cell in total_cell_count. A value of 0 in the array represents a non-lymph, 2 is CD4-, 6 is CD4+

```
Public WideAngleCD4(49999) As Byte
Public SmallAngleCD4(49999) As Byte
Public ExtinctionCD4(49999) As Byte
Public SuperWideAngleCD4(49999) As Byte
```

These arrays contain event data binned to 256.

The rest of the parameters passed into the ReadCD4Results() function are values calculated by the CBC algorithm and passed in by value. The CBC algorithm must be run prior to the ReadCD4Results() call.

C++ Function Declaration:

```
int ReadCD4Results(BYTE *pWideAngle,
                           BYTE *pExtinction,
                           BYTE *pSmallAngle,
                           BYTE *pSuperWideAngle,
                           BYTE *pClassification,
```

```
                                Sample * pCalculated,
                                char * FCSFileName,
                                float WBCCount,
                                float NeutCount,
                                float LymCount,
                                float MonoCount,
                                long CBCFlags);
```

C++ Struct Definition:

```
struct Sample
{
      float CD4Result;
      float CD4PercentResult;
      long Flags;
      float total_cell_count;
      float initial_cell_rate;
      float final_cell_rate;
};
```

3. Function to retrieve previously calculated CD4 results: `RecoverCD4Results()`

This function shall be defined in ExcellCD4.dll and called by the VB UI when displaying previously calculated results. The return value shall be an Integer indicating success (0), failure (1), or .fcs file error (2). LoadCD4Parameters() should NOT be called prior to calling this function. The RecoverCD4Results() function shall read the Classification array and Sample structure that were previously saved in the .FCS file.

All parameters to this function are described in the previous section.

VB Function Declaration:

```
Public Declare Function RecoverCD4Results Lib
"C:\windows\system32\ExcellCD4.dll" (ByRef WideAngleCD4 As Byte, _
            ByRef ExtinctionCD4 As Byte, _
            ByRef SmallAngleCD4 As Byte, _
            ByRef SuperWideAngleCD4 As Byte, _
            ByRef ClassificationCD4 As Byte, _
            ByRef CalculatedResultsCD4 As Calculated_CD4, _
            ByVal CD4FCSFileId As String) As Integer
```

VB Function Call:

```
Status = RecoverCD4Results(WideAngleCD4(0), ExtinctionCD4(0),
SmallAngleCD4(0), SuperWideAngleCD4(0), ClassificationCD4(0),
CalculatedResultsCD4, strCD4FCS)
```

C++ Function Declaration:

```
int RecoverCD4Results(BYTE *pWideAngle,
                      BYTE *pExtinction,
                      BYTE *pSmallAngle,
                      BYTE *pSuperWideAngle,
                      BYTE *pClassification,
                      Sample * pCalculated,
                      char * FCSFileName);
```

EXHIBIT 17

From: Jennifer Waite
Sent: 6/8/2007 8:59:27 PM
To: Karl Gu
CC:
Subject: RE: CD4 Update

Sorry about that! I guess we were looking at a really old file created by the 2280 machine using manual prep methods. Nevermind!!

Jennifer Waite

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-----Original Message-----
From: Karl Gu [mailto:kgu@mwi-danam.com]
Sent: Friday, June 08, 2007 1:29 PM
To: Jennifer Waite; Williamross7@tx.rr.com
Cc: Andrea Desrosiers; Dorothy Branco
Subject: RE: CD4 Update

Hi Jen,

I checked Hematology24.dll code. The classification for CD4 is set as 0 all the time when store to disk. I am not sure why you have any junk data.

Karl

From: Jennifer Waite [mailto:jwaite@pointcaretechnologies.com]
Sent: Friday, June 08, 2007 10:20 AM
To: Karl Gu; Williamross7@tx.rr.com
Cc: Andrea Desrosiers; Dorothy Branco
Subject: CD4 Update

Hi Karl and William,

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Thanks…and have a great weekend!

-Jen

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